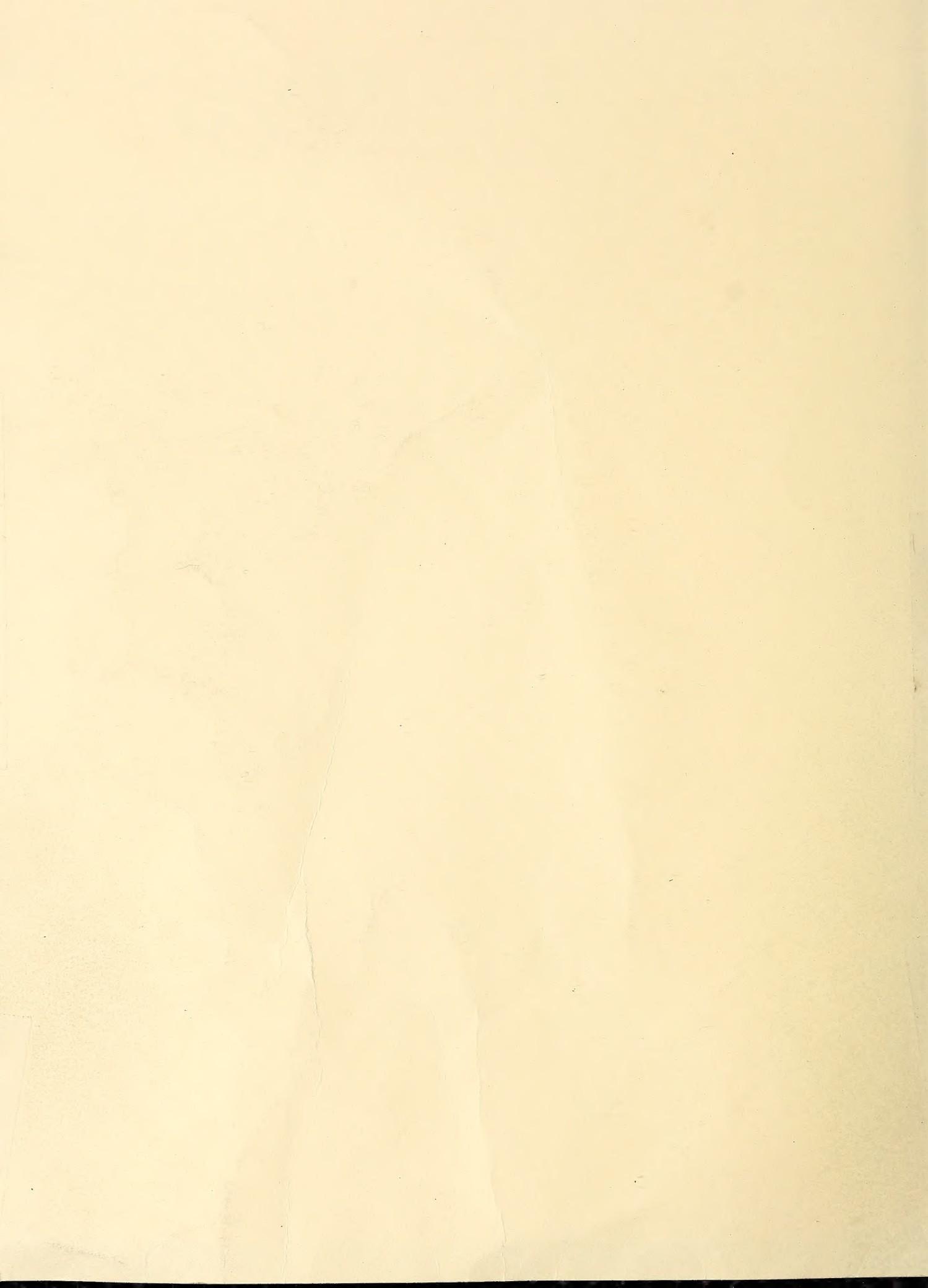


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DURUM WHEAT



QUALITY REPORT

Physical, Chemical, Milling, and Macaroni Characteristics

1977 & 1978 CROPS

UNITED STATES DEPARTMENT OF AGRICULTURE
SCIENCE AND EDUCATION ADMINISTRATION, AGRICULTURAL RESEARCH
North Central Region

and

NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION
Department of Cereal Chemistry and Technology

UNITED STATES DEPARTMENT OF AGRICULTURE
SCIENCE AND EDUCATION ADMINISTRATION, AGRICULTURAL RESEARCH
in cooperation with
STATE AGRICULTURAL EXPERIMENT STATIONS

QUALITY EVALUATION OF DURUM WHEAT VARIETIES

1977 and 1978 CROPS^{1/}

by

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^{1/} This is a progress report of cooperative investigations containing some results that have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and to those persons having direct and special interest in the development of agricultural research programs.

This report was compiled by the Science and Education Administration, Agricultural Research, U.S. Department of Agriculture. Special acknowledgment is made to the North Dakota State University for their facilities and services provided in support of these studies. The report is not intended for publication and should not be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

COOPERATING AGENCIES, STATIONS, AND PERSONNEL

The cooperating agencies, stations, and personnel conducting the varietal plot and nursery experiments concerned with these durum tests in 1977 were as follows:

California Agricultural Experiment Station:

Davis and Tulelake: W. F. Lehman, Y. P. Puri,
and C. O. Qualset

Montana Agricultural Experiment Station:

Havre and Sidney: F. H. McNeal*, R. T. Harada,
and G. P. Hartman

North Dakota Agricultural Experiment Station:

Dickinson and Williston: T. J. Conlon, N. Riveland,
E. French, and J. Quick

Oregon Agricultural Experiment Station:

Pendleton: C. R. Rohde

South Dakota Agricultural Experiment Station:

Selby and Watertown: J. J. Bonneman, G. Bucheneau,
D. L. Keim and K. Sellers

Washington Agricultural Experiment Station:

Royal Slope: C. F. Konzak, M. A. Davis, and
E. Donaldson

* SEA/AR Employees

COOPERATING AGENCIES, STATIONS, AND PERSONNEL

The cooperating agencies, stations, and personnel conducting the varietal plot and nursery experiments concerned with these durum tests in 1978 were as follows:

Arizona Agricultural Experiment Station:

Mesa: R. K. Thompson

California Agricultural Experiment Station:

Davis, El Centro and Tulelake: W. F. Lehman,
Y. P. Puri, and C. O. Qualset

Idaho Research and Extension Center:

Aberdeen: D. W. Sunderman*

Minnesota Agricultural Experiment Station:

Crookston and Morris: R. Busch*, J. Wiersma, and
D. D. Warnes

Montana Agricultural Experiment Station:

Sidney: F. H. McNeal*, and G. P. Hartman

North Dakota Agricultural Experiment Station:

Dickinson and Williston: T. J. Conlon, E. French,
N. Riveland, and J. Quick

South Dakota Agricultural Experiment Station:

Selby and Newell: J. J. Bonneman and D. L. Keim

Washington Agricultural Experiment Station:

Pullman: C. F. Konzak, M. A. Davis, and
E. Donaldson

* SEA/AR Employees

INTRODUCTION

The fifteenth Durum Wheat Quality Report contains data for the 1977 and 1978 crops. Samples of standard varieties and new strains of durum wheat grown in cooperative experiments in the durum wheat region of the United States^{2/} were milled and evaluated by the Hard Red Spring and Durum Wheat Quality Laboratory in cooperation with the Department of Cereal Chemistry and Technology on the campus of North Dakota State University at Fargo, ND. The evaluation of some of the durum wheats is integrated with the work done by the Department of Cereal Chemistry and Technology of North Dakota State University. Methods and techniques are described in detail in the text of the report.

Where sufficient quantity of sample was available for macro or micro processing, the semolina was processed into spaghetti to determine the quality characteristics. When the quantity of semolina was insufficient (micro quantity), only the color of the semolina (Gardner^{3/}) color score) was determined.

The purpose of this report is to make available to cooperators the quality data on standard varieties and new strains of durum wheat from the 1977 and 1978 crops.

^{2/} Busch, R. H., Elsayed, F. A., and Quick, J. S. Wheat varieties grown in cooperative plot and nursery experiments in the spring wheat region in 1977 and 1978. Science and Education Administration/Agricultural Research, U.S. Department of Agriculture.

^{3/} Mention of a trademark name or proprietary product does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture, and does not imply its approval to the exclusion of other products that may also be suitable.

SOURCE OF THE 1977 CROP SAMPLES

Five hundred and twelve durum samples were received from 11 stations in 7 states--Arizona, California, Montana, North Dakota, Oregon, South Dakota, and Washington--for quality evaluation as follows:

Uniform Nursery (277 samples): Havre and Sidney, MT; Dickinson and Williston, ND; and Selby and Watertown, SD. The varieties and selections included in this nursery are listed on page 7. In addition, different uniform nursery samples were received from Tulelake, CA, Pendleton, OR, and Royal Slope, WA.

Field Plots (71 samples): Mesa, AZ; Davis and Tulelake, CA; and Williston, ND.

Advanced Nursery (64 samples): Mesa, AZ; Tulelake, CA; and Royal Slope, WA.

Preliminary Nursery (100 samples): Tulelake, CA.

SOURCE OF THE 1978 CROP SAMPLES

Six hundred and thirty-three durum samples were received from 13 stations and 8 states--Arizona, California, Idaho, Minnesota, Montana, North Dakota, South Dakota, and Washington--for quality evaluation as follows:

Uniform Nursery (185 samples): Crookston and Morris, MN; Sidney, MT; Williston, ND; and Newell and Selby, SD. The varieties and selections included in this nursery are listed on page 8. In addition, different uniform nursery samples were received from Aberdeen, ID and Pullman, WA.

Field Plots (59 samples): El Centro, CA; and Dickinson and Williston, ND.

International Nursery (25 samples): Pullman, WA.

Advanced Nursery (274 samples): Davis and Tulelake, CA; and Pullman, WA.

Special Nursery (90 samples): Mesa, AZ; Aberdeen, ID; and Pullman, WA.

1977 CROP UNIFORM REGIONAL DURUM NURSERY

Entry No.	Entry	CI or Sel. No.	Year Entered	Origin
1	MINDUM	5296	1929	Minnesota
2	ROLETTE	15326	1968	ND-USDA
3	WARD	15892	1969	"
4	WAKOMA	DT316	1968	Saskatchewan
5	CROSBY	17282	1970	ND-USDA
6	BOTNO	17283	"	"
7	RUGBY	17284	"	"
8	CANDO	17438**	1972	North Dakota
9	Lds//61130/Lds	D7047**	1973	"
10	COULTER	DT411	1974	Manitoba
11	6530/65114	D7175	"	North Dakota
12	6515/Ward	D7233	1975	"
13	6633/6647	D7266**	"	"
14	68112/Ward	D72114***	"	"
15	6530/6654	D7224**	1976	"
16	6676/6750	D7298***	"	"
17	Hc/DT310	DT354	"	Saskatchewan
18	7175/Ward	D74110	"	North Dakota
19	"	D74111	"	"
20	"	D74112	"	"
21	Lds/Ward	D7307	1977	"
22	6515/Ward	D7327	"	"
23	Ward/3/Su92Dw//Ldn/61130	D7368**	"	"
24	Ward/6750	D73106***	"	"
25	68112/Ward	D73121***	"	"
26*	Ward/6733	D7475	"	"
27*	7088/Ward	D7489**	"	"
28*	Wkm/Rugby	D74164	"	"

* Grown only at ND and Canada stations.

** Semidwarfs

*** Medium height

1978 CROP UNIFORM REGIONAL DURUM NURSERY

Entry No.	Entry	CI or Sel. No.	Year Entered	Origin
1	MINDUM	5296	1929	Minnesota
2	ROLETTE	15326	1968	ND-USDA
3	CROSBY	17282	1970	"
4	BOTNO	17283	"	"
5	RUGBY	17284	"	"
6*	CANDO	17438	1972	North Dakota
7*	CALVIN	D7047	1973	"
8	COULTER	DT411	1974	Manitoba
9	EDMORE	D7175	"	North Dakota
10*	6530/6654	D7224	1976	"
11	Edmore/Ward	D74110	"	"
12	"	D74112	"	"
13	Wkm/Rugby	D74164	1977	"
14	Ward/Macoun	DT427	1978	Manitoba
15	Ward/68139	D7483	"	North Dakota
16	Edmore/Ward	D74109	"	"
17	Wkm/Ward	D75111	"	"
18	Wc/Ward	D75140	"	"
19	Wkm/Rugby	D75171	"	"
20	Wkm/R1t	D75209	"	"
21**	7233/Edmore	D761	"	"
22**	"	D762	"	"
23**	"	D763	"	"
24**	"	D764	"	"

* Semidwarfs

** Grown only at North Dakota and Canada stations.

METHODS

The methods used in the testing of the samples were essentially the same as given in the last report.

Briefly, the following methods and terminologies were applied:

Test Weight Per Bushel (TW) - The weight per Winchester bushel of dockage-free wheat.

Thousand Kernel Weight (KW) - The 1000 kernel weight was determined by counting the number of kernels in a 10 g sample of cleaned, picked wheat on an Asco seed counter.

Kernel Size (LG, MD, SM) - The percentage of the size of the kernels [large (LG), medium (MD), and small (SM)] was determined on a wheat sizer as described by Shuey^{4/}.

The sieves of the sizer were clothed as follows:

Top Sieve - Tyler # 7 with 2.92 mm opening
Middle Sieve - Tyler # 9 with 2.24 mm opening
Bottom Sieve - Tyler #12 with 1.65 mm opening

Protein Content (PR) - The protein (14% m.b.) was calculated by multiplying the percent nitrogen, as determined by the standard Kjeldahl procedure, by the factor of 5.7.

Milling - The samples were cleaned by passing the wheat over an Emerson kicker and dockage tester and through a modified Forster scourer Model 6. The clean, dry samples were pretempered to 12.5% for at least 72 hours prior to any additional tempering before milling.

The field plot and large advanced yield nursery samples were milled on a Buhler experimental mill specially designed for milling durum wheat. The mill is equipped with corrugated rolls throughout and the semolina purified on a Miag laboratory purifier. All of the stock is handled pneumatically. The mill flow is shown on page 10. The clean, dry wheat was tempered in three stages: first to 12.5% moisture at least 72 hours prior to the second stage which is to add an additional 2.0% for 18 hours to give a cumulative moisture of 14.5%, then a final temper of 3.0%, 45 minutes prior to milling. The purified semolina is used in testing the quality of semolina. The semolina extraction was calculated on a total products basis.

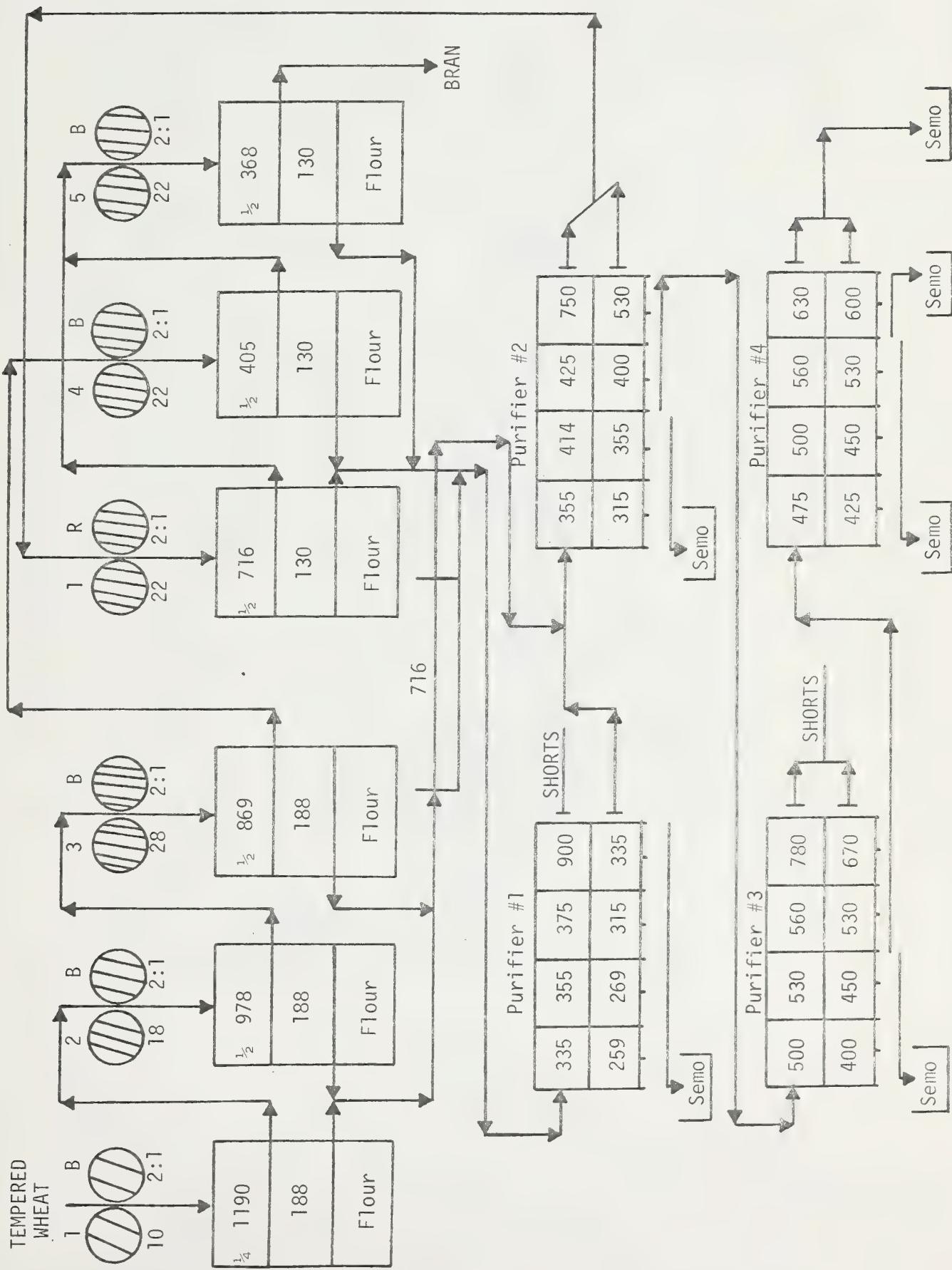
The small samples were milled according to the method of Vasiljevic et al. ^{5/}. The flow diagram of this system is shown on page 11. Extraction is determined on a clean, dry basis.

4/ Shuey, William C. A wheat sizing technique for predicting flour milling yield. *Cereal Sci. Today* 5: 71 (1960).

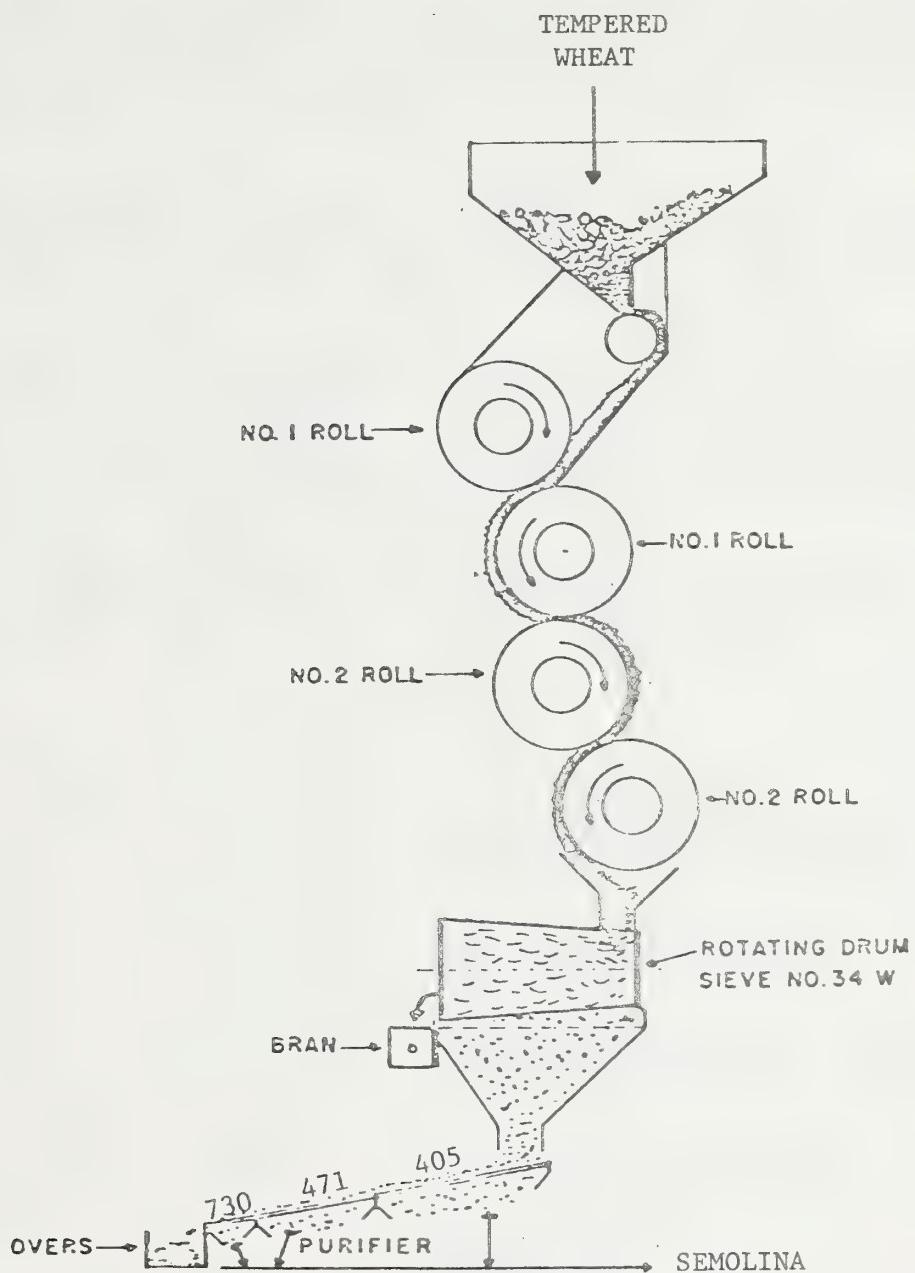
5/ Vasiljevic, S., Banasik, O. J., and Shuey, W. C. A micro unit for producing durum semolina. *Cereal Chem.* 54: 397 (1977).

FLOW DIAGRAM FOR LARGE DURUM WHEAT SAMPLES

- 10 -



FLOW DIAGRAM FOR SMALL DURUM WHEAT SAMPLES



Semolina Extraction (SEEX) - The percent semolina calculated on a total products basis.

Speck Count (SP) - The number of specks in three different one-inch square areas of semolina enclosed by a special glass and frame were counted. Any materials other than pure endosperm chunks, such as bran particles, etc. were considered specks. The average of three readings was converted to the number of specks per 10 sq in (speck count).

Color Score - The color of the spaghetti or semolina has been generally accepted as the most important single grading factor. A deep amber or golden color is the most preferable. The amount of yellow pigmentation determines the extent or degree of amberness.

Samples which have a color rating 1.5 points below the standard spaghetti score or 9 points below the standard semolina color score are unsatisfactory. It is possible that the average color score for a crop year may be higher or lower than average; therefore, this would be taken into consideration when giving the overall rating of a variety over a number of years.

The grading system shown below has been adopted for scoring the color of semolina and spaghetti relative to the standard color score.

COLOR SCORE

<u>Semolina</u>	<u>Spaghetti</u>	<u>Description</u>
9 above	1.5 above	Much deeper and intense yellow pigmentation than standard
6 above	1.0 above	Deeper and more intense yellow pigmentation than standard
3 above	0.5 above	Slightly deeper and more intense yellow pigmentation than standard
Equal to Standard	Equal to Standard	Standard quality, depth and intensity of yellow pigmentation
3 below	0.5 below	Slightly less depth and intensity, but sufficient quantity of pigmentation
6 below	1.0 below	Slightly less quantity as well as depth and intensity of pigmentation than the standard, but still sufficient to be rated satisfactory on the basis of color
9 below	1.5 below	Sufficiently less quantity of yellow pigmentation than the standard to give a pale yellow color and graded unsatisfactory for color score.

Semolina Color Score (DU) - The semolina color score was determined by using Model XL-10 Gardner digital color difference meter. The instrument was calibrated using a yellow standard tile ($L = 82.5$, $a = -3.6$, and $b = +25.2$). A sample of semolina (3/4-inch deep) is placed in a sample cup for an Agtron reflectance color meter. After the first reading has been taken, the sample is turned 90 degrees and a second reading is taken and the two readings averaged. The "b" color value is converted to a color score ranging from 1 to 14, with 14 being a deep yellow and the most desirable color. In this report, the semolina color score, reported as "DU" in the tables, is multiplied by a factor of 10.

Spaghetti Color (VI) - The spaghetti color scores were determined on a Model D25 Hunter color difference meter equipped with a D25A optical unit. The specimen area (2 in diameter) was covered with straight spaghetti strands and readings were taken against a black background with 0% reflectance. Color difference values ($L\%$, $a\%$, and $b\%$) were measured for all the spaghetti samples by the method of Walsh, Gilles, and Shuey^{6/}. A uniform chromaticity chart was used for determining spaghetti color scores.

MACRO Spaghetti Processing - Spaghetti was processed on a semi-commercial scale pasta extruder (DEMACO). The control as well as sprouted durum was processed with the following extruding conditions.

Temperature 49.5°C

Rate. 12 rpm

Absorption. 31.5%

Vacuum. 18 in Hg

These were the optimum conditions for processing spaghetti, which were calculated by a linear programming technique.

To process the pasta, 1000 g batch^{7/} was premixed by slowly adding the water and mixing at a slow speed for approximately 30 seconds, and high speed for 10 seconds, then add the remainder of the water at slow speed in a Hobart C-100-T mixer equipped with a pastry knife agitator. After all of the water has been added, the semolina and water are blended at high speed for 30 seconds; the mixer was stopped to scrape down the sides of the bowl and the blending continued for 90 seconds more to complete the premix stage. The

6/ Walsh, D. E., Gilles, K. A., and Shuey, W. C. Color determination of spaghetti by the tristimulus method. Cereal Chem. 46: 7 (1969).

7/ Weight was determined as follows:

$$\left[\frac{100-m_1}{100-m_2} - 1 \right] \left(W - W \left(\frac{m_2-m_1}{m_1} \right) \right) = \text{Amount H}_2\text{O added}$$

where:

m_1 = original moisture
 m_2 = desired moisture
 W = desired amount of sample

premixed pasta was then transferred to the vacuum mixer of the press and extruded through an 84-strand 0.043 in teflon spaghetti die. A jacketed extension tube (9 $\frac{1}{4}$ " long x 1-3/4" inside diameter) was attached to the semicommercial pasta extruder to allow more time for hydration of the semolina and minimize the number of white specks (unhydrated semolina) in the spaghetti. Extrusion temperature was controlled by a circulating water bath.

MICRO Spaghetti Processing - Thirty grams of semolina were mixed with water to form a stiff dough, pressed into spaghetti and dried. The equipment and procedure have been described by Harris and Sibbitt^{8/} and Fifield^{9/}.

Spaghetti Drying - Spaghetti was dried in an experimental pasta dryer for an 18 hour cycle as described by Gilles, Sibbitt, and Shuey^{10/}. During the drying period, the humidity of the dryer was decreased linearly from 95 to 60% R.H. and the temperature was held constant at 100°F.

Cooking Characteristics of Spaghetti -

a. Cooking Procedure

A modification of the method of Sheu et al.^{11/} was adopted to determine cooking quality of spaghetti used in this study. Spaghetti (10 g) which had been broken into lengths of approximately 5 cm, was placed into 300 ml of boiling 1% NaCl salt solution in a 500 ml beaker. After 10 minutes cooking, the samples were washed thoroughly with distilled water in a Buchner funnel, allowed to drain for 2 minutes, and then weighed to determine cooked weight.

b. Firmness Score (FR)

Two strands of cooked spaghetti were placed on a plexiglass plate and sheared at a 90° angle with a special plexiglass tooth. A continuous recording of distance versus force was made by the instrument during the operation. An automatic integrator was used to calculate the area under the curve (g cm) which was the amount of work required to

^{8/} Harris, R. H., and Sibbitt, L. D. Experimental durum milling and processing equipment with further quality studies on North Dakota durum wheats. Cereal Chem. 19: 388 (1942).

^{9/} Fifield, C. C. Experimental equipment for manufacture of alimentary pastes. Cereal Chem. 11: 330 (1934).

^{10/} Gilles, K. A., Sibbitt, L. D., and Shuey, W. C. Automatic laboratory dryer for macaroni products. Cereal Sci. Today 11: 322 (1966).

^{11/} Sheu, Ruey-yi, Medcalf, D. G., Gilles, K. A., and Sibbitt, L. D. Effect of biochemical constituents on macaroni quality. I. Differences between hard red spring and durum wheats. J. Sci. Fd. Agr. 18: 237 (1967).

shear the cooked spaghetti. To measure firmness, the average of three integrator scores was used, and the average work to shear was used as a measure of spaghetti firmness. The firmness score was read directly from the integrator value.

The higher the value, the firmer the spaghetti. A value of approximately 8.75 appears to be of preference.

Calculations were as follows:

$$E = 0.0216 \times A \text{ (g cm)}$$

A = Average integrator reading

E = Area of curve in g cm

c. Residue (RE) -

The solids remaining after the combined cooking and washing water was evaporated.

DISCUSSION

The following discussion represents some of the basic techniques and criteria used in the milling and cooking quality evaluation of durum wheat samples. Several testing factors are used to determine the overall quality characteristics or final evaluation of a particular sample including in general the kernel characteristics, milling performance, and cooking performance.

Each evaluation factor can be important. A sample could be of a sufficiently poor quality for a given factor to eliminate it from possible future testing. However, a sample submitted for the first time and found to show little promise should be tested again to establish if it has some or good promise, or no promise. A sample which is consistently rated as little promise or no promise should be discarded.

A computer program for evaluating the milling and cooking quality of the durum samples was developed^{12/}. The program was used for evaluating all samples.

Eleven independent variables were selectively incorporated into weighted rating equations. These variables were test weight, kernel weight, percent large, medium and small kernels, semolina extraction, spaghetti and semolina color, visual color, spaghetti firmness and cooking residue. Each of the 11 variables was rated by arbitrary faulting limits compared with a percentage deviation from the standard(s) as major, minor, probable or no fault. For each of the 11 variables, absolute limits were established to give a final evaluation of 1 = "no promise"; 2 = "little promise", 3 = "some promise"; and 4 = "good promise". Some of these ratings automatically translate into an evaluation of 1 because of the absolute limits established.

Because of the large number of durum samples received in recent years and the small size of some of the samples, it has become prohibitive to perform all the evaluation tests on each sample. Such limitations prompted the formulation of 12 separate weighting equations each representing a different combination of variables for the final evaluation of the sample. By utilizing these 12 equations, anywhere from 7 to 11 variables in various combinations can be evaluated.

All samples, as in previous years, are compared to a composite standard that represents a blend of the crop year blended to a known quality. However, the samples for the individual stations are evaluated against the average results of the check varieties from the respective stations.

^{12/} Dick, J. W., and Shuey, W. C. A computerized method for evaluating durum wheat quality. Cereal Chem. 53: 910 (1976).

The Final Evaluation (VAL) rating applies only to the data contained in the year of the report. The main defects and outstanding features are discussed. A selection which is promising as a new variety should be continued. A sample which shows little or no promise should be discontinued. Only the 1978 data will be discussed in this report.

ACKNOWLEDGMENTS

We thank W. C. Shuey, C. A. Watson, and C. P. Lacher for their help on the 1977 quality data.

EXPERIMENTAL RESULTS - 1978 CROP

The results are tabulated and presented in the following order: Tables 1-3, Uniform Regional Nursery Samples; Tables 4 & 5, Western Regional Nursery Samples; Tables 6-8, Field Plot Nursery Samples; Table 9, International Nursery Samples; Tables 10-12, Advanced Nursery Samples; and Tables 13-16, Special Nursery Samples.

A study involving over 400 samples from two crop years has indicated that the semolina color score (DU) can reasonably predict the spaghetti color score within a half a point which is within the range of duplication. A correlation coefficient of 0.8 was found between the semolina color score and the spaghetti color score.

The lipoxidase activity of the present varieties and selections is sufficiently low and does not adversely affect the color when processing semolina into spaghetti.

UNIFORM REGIONAL NURSERY SAMPLES

Minnesota, Montana, North Dakota, and South Dakota Blend (Table 1). An equal amount of semolina from each of the entries grown in the Uniform Durum Nursery at the following locations was blended before processing into spaghetti. The wheat data were averaged: Crookston and Morris, MN; Sidney, MT; Williston, ND; and Newell and Selby, SD.

All entries showed some or good promise when compared to the Standard Blend, Crosby, Rolette, and Rugby.

Williston, North Dakota and Sidney, Montana (Tables 2 and 3). Entries from Williston, ND all showed some to good promise. The one extra entry (Wells) from Sidney, MT showed no promise when compared to the Standard Blend, primarily because of kernel size and milling.

WESTERN REGIONAL NURSERY SAMPLES

Aberdeen, Idaho (Table 4). Four entries showed no promise, Cando, Wandell, WA6517 and WA6522, mainly because of kernel size, milling, specks, and semolina color.

Pullman, Washington (Table 5). All entries except for the bread wheat sample showed some to good promise. Cooked spaghetti firmness was low on most of the entries.

FIELD PLOT NURSERY SAMPLES

El Centro, California (Table 6). Compared to the Standard Blend, the entries showing little or no promise were Produra, Maghreble, and 1000D. The entries were faulted for milling, semolina color, spaghetti color, and cooked spaghetti firmness.

Dickinson, North Dakota (Table 7). All entries showed some or good promise when compared to the standards of Crosby, Rolette, and Rugby.

Williston, North Dakota (Table 8). Compared to the standards of Crosby, Rolette, and Rugby, only three entries, Cando, Waskooma, and Wells, showed no promise, primarily because of low kernel weight and kernel size.

INTERNATIONAL NURSERY SAMPLES

Pullman, Washington (Table 9). Compared to the Standard Blend, four entries, Crosby, Gediz "S", Mexi "S" - FG "S", and Quilafen showed some or good promise. The primary fault of the other entries was semolina color.

ADVANCED NURSERY SAMPLES

Davis, California (Table 10). Compared to the Standard Blend, the following entries showed some to good promise: 847-5, 847-7, 847-27, 847-63, 848-7, 862-65057, and 862-65435. The major deficiencies of the other entries were semolina color and milling.

Tulelake, California (Table 11). Several entries from this station showed some or good promise, but wheat protein was minimal on some entries. The major deficiency of the other entries was semolina color.

Pullman, Washington (Table 12). Compared to the Standard Blend, the following entries showed good promise: CA-389, CH-725036, E7124141, and 71150150. The major deficiency of the other entries was semolina color.

SPECIAL NURSERY SAMPLES

Mesa, Arizona (Table 13). Compared to the Standard Blend, entries No. 6, 7, 8, 9, and 10 showed some to good promise. The major deficiency of the other entries was semolina color.

Mesa, Arizona (Table 14). Compared to the Standard Blend, only one entry, No. 27, showed good promise. The major deficiency of the other entries was semolina color.

Aberdeen, Idaho (Table 15). Compared to the Standard Blend, the entries of Modoc, CA0304, CA0310, CA0313, TL-75393, TL-75394, TL-75395, TL-75396, TL-75397, TL-75408, WA6519, WA6520, WA6521, WA6523, and WA6525 showed some to good promise. The major fault of the other entries was semolina color.

Pullman, Washington (Table 16). Compared to the Standard Blend, the entries of CA000313, WA6519, WA6524, TL-75396, and TL-75408 showed good promise. Several other entries showed some promise. The major fault of the other entries was semolina color.

TABLE 1

QUALITY DATA OF DURUM UNIFCRN NURSERY BLENDS 1977 CROP

VARIETY	STATE = - - - NT-ND-SD										STATION=BLEND NURSERY=BLEND										Deficiencies ³			
	TW ^{1/} kg/Bu	KW g%	LG %	MD %	SM %	PR %	SEX %	SP	DU	VI	FR	RE %	VAL ^{2/} %	TW kg	KW g	LG %	SM %	PR %	MG %	SP	DU	VI	FR	RE
STD 5/17/78	61.0	37.3	3.3	62	5	1.3-7	63-1	110	8-5	7-95	3-9	1	PB	PB	PB	PB	PB	MJ	PB	YS	YS	YS	MN	YS
CROSBY	62.2	37.3	2.2	74	4	15-5	58-3	120	9-0	9-91	3-7	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
ROLEITE	63.2	41-9	32	66	2	16-1	60-9	120	9-0	8-94	6-9	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
RUGBY	62.3	39-4	23	73	4	15-2	58-8	125	9-0	8-29	3-1	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
WARD	62.3	38-8	24	73	3	15-5	57-5	125	9-5	9-03	5-0	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
BOTNO	60.8	38-9	23	73	4	15-3	60-3	120	8-5	9-20	3-8	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
CANDO	62.3	36-7	18	77	5	14-6	57-9	125	9-0	8-38	5-0	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
COLDIER	61.8	39-6	19	78	3	15-1	59-2	125	9-0	11-71	3-8	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
MINDUM	62.8	39-3	23	74	3	15-7	60-0	105	8-0	8-96	6-8	1	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
WAKOOMA	61.7	38-7	19	78	3	16-0	57-8	120	9-0	9-31	4-0	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7047 - Calvin	63.1	38-9	21	76	3	14-9	59-6	10-0	9-53	3-6	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7175 - Edmore	62.5	42-1	28	70	2	15-5	58-8	135	9-5	11-62	6-3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7224	62.8	41-8	29	69	2	14-3	58-3	125	9-5	10-74	3-5	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7233	63.0	41-9	32	66	2	15-5	60-5	125	9-5	10-53	3-5	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7266	62.2	41-5	20	77	3	15-2	59-6	125	9-0	9-78	4-2	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7298	62.4	39-9	26	71	3	15-5	57-8	130	9-5	10-02	3-6	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7307	62.3	39-4	29	68	3	15-4	58-4	125	9-5	7-95	3-7	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7327	63.4	43-1	40	58	2	15-2	60-2	125	9-0	8-16	4-1	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7368	63.0	38-8	17	79	4	14-8	58-3	130	9-5	8-86	4-6	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7475	62.5	37-3	24	73	3	16-1	57-3	130	9-5	9-35	4-6	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7489	62.5	39-7	24	73	3	15-4	55-7	135	9-5	10-67	4-7	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D72114	62.3	42-6	46	53	1	15-0	56-4	125	9-0	9-44	4-0	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D73106	62.4	40-7	27	69	4	14-7	59-7	125	9-0	10-58	4-0	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D73121	62.4	37-5	20	76	4	15-8	57-6	130	9-5	8-40	3-8	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D74110	62.3	40-1	23	74	3	15-2	57-0	130	9-5	11-28	3-9	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D74111	62.6	42-4	18	79	3	15-5	58-8	125	9-0	11-32	3-9	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D74112	62.8	46-4	34	65	1	15-5	60-2	130	9-5	10-76	3-8	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D74164	61-3	40-0	26	72	2	16-5	57-0	120	9-0	10-80	3-7	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
DT354	62.5	43-4	34	65	1	15-5	57-9	130	9-5	10-13	3-9	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB

1/ TW = Test weight; KW = 1000-Kernel weight; LG = Large kernels; MD = Medium kernels; SM = Small kernels;
 PR = Wheat protein (14% m.b.); SEE = Semolina extraction; SP = Number of specks in semolina per 64.5
 sq cm; DU = Semolina color; VI = Spaghetti color; FR = Cooked spaghetti firmness in g/cm; RE = Cooked
 spaghetti residue; MG = Milling deficiency based on percent semolina extraction.
 2/ VAL = Final evaluation; 1 = No promise; 2 = Little promise; 3 = Some promise; 4 = Good promise.
 3/ PB = Probable; MN = Minor; MJ = Major.
 4/ SD = Standard; YS indicates standard.

TABLE 2

QUALITY DATA OF UNIFORM REGIONAL DURUM NURSERY A/ 1977 CROP

VARIETY	STATE=WASHINGTON STATION=RGOVAL_SLCPE NURSERY=UNIFORM													
	TW	KW	LG	MD	SM	FR	SEX	SP	DU	VI	FR	RE	SD	
CROSBY	64.0	50.8	75	23	2	12.9	63.3	105						
ROLETTE	63.5	44.6	69	30	1	13.8	66.3	105						
RUGBY	63.0	47.6	70	28	2	12.9	63.7	110						
BUTNO	63.0	52.4	74	25	1	13.5	64.5	105						
CANDO	65.0	44.6	66	32	2	11.3	65.1	110						
MINDUM	64.5	46.9	66	32	2	11.9	65.3	110						
WAKOQOMA	63.0	49.0	70	28	2	13.2	63.7	105						
WARD	63.0	52.6	78	20	2	13.7	63.9	110						
WELLS	64.0	45.8	59	38	3	12.7	64.1	105						
CALVIN	66.0	55.2	74	24	2	12.0	65.3	105						
EDMORE	63.0	54.9	77	22	1	12.1	62.3	115						
D-71175	64.5	54.9	84	15	1	11.1	63.0	110						
D-7224	63.5	49.8	78	20	2	13.5	63.4	105						
D-7233	64.0	55.2	76	22	2	12.2	61.9	110						
D-7266	63.5	51.5	76	22	2	11.8	62.2	105						
D-7270	63.0	51.5	78	20	2	14.5	65.0	105						
D-7275	63.5	51.0	74	24	2	13.5	62.2	115						
D-7298	63.0	50.0	82	14	2	13.3	61.8	110						
D-71101	63.0	51.5	72	26	2	14.0	61.0	110						
D-71104	63.0	52.1	72	26	2	13.3	59.5	105						
D-71111	63.5	51.8	76	23	1	12.6	62.6	110						
D-71117	63.0	59.5	87	12	1	12.9	60.4	110						
D-72114	63.5	51.3	73	26	1	13.6	62.7	105						
D-74107	62.5	51.8	76	22	2	13.5	60.6	110						
D-74110	63.5	53.2	71	27	2	13.4	61.9	105						
D-74111	64.0	57.3	80	19	1	13.3	64.2	110						
D-74112	64.0	53.2	80	18	2	12.9	63.4	115						
D-74114	63.5	50.0	77	22	1	13.1	61.5	115						
D-74116	63.0	50.0	76	22	2	12.5	66.5	110						
DT-354	62.5	52.9	79	20	1	12.1	64.5	110						
DT411														

A/ See Table 1 for explanation of abbreviations and symbols.

MJ

PB

TABLE 3

QUALITY DATA OF WESTERN REGIONAL DURUM NURSERIES A/ 1977 CROP

VARIETY	STATE=CALIFORNIA STATION=TULELAKE NURSERY=UNIFORM																									
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	RE	FR	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD	
STD 5/23/78	37.3	33	62	5	13.7	58.0								115												
CANDO	64.0	47.4	68	31	1	12.8	56.7							115												
COCORIT	63.5	53.2	82	17	1	11.8	56.9							100												
CRANE	64.0	51.3	78	21	1	11.7	55.7							80												
MEXICALI 75	64.5	58.4	89	11	0	12.6	58.3							110												
MODOC	65.5	54.6	82	18	0	13.4	56.5							110												
PRODURA	65.0	54.6	82	18	0	13.3	56.7							90												
WANDELL	62.5	47.6	14	80	6	11.5	54.8							110												
71160015	64.0	54.6	84	15	1	13.2	55.4							110												
72160037	64.0	54.1	85	14	1	13.2	54.5							115												
CA000304	64.5	48.8	75	24	1	13.5	58.3							115												
CA000310	64.0	48.3	72	27	1	13.5	57.0							120												
CA000313	64.0	51.8	78	21	1	12.7	59.0							120												
D7047	64.0	51.8	78	21	1	12.7	59.0							120												
T7500009	63.5	46.5	69	30	1	13.5	61.4							110												
T7500012	64.0	51.0	74	25	1	12.8	55.4							105												
T7500017	64.0	48.8	72	27	1	11.9	56.2							110												
T7500026	64.0	48.3	78	21	1	12.8	55.2							105												
T7500041	64.0	50.3	79	20	1	12.7	56.9							110												
T7500049	63.0	50.8	72	27	1	12.5	58.2							110												
T7500052	63.0	53.2	70	29	1	12.3	57.8							105												
T7500067	64.0	56.8	82	17	1	12.4	57.8							110												
T7500072	64.0	53.2	81	16	1	13.5	59.0							115												
T7500202	64.0	51.3	71	28	1	13.6	61.8							120												
T7500447	64.5	48.3	66	33	1	13.1	60.4							115												
TL-76-613	64.5	53.5	89	10	1	12.9	60.8							115												
TL-76-614	64.0	51.5	82	17	1	12.6	56.4							120												
TL-76-615	64.0	46.9	61	38	1	13.4	59.1							120												
TL-76-616	64.0	48.5	74	25	1	13.8	61.0							110												
TL-76-617	64.0	50.0	70	29	1	13.3	59.8							115												
TL-76-618	64.5	56.8	85	14	1	12.8	61.6							105												
TL-76-619	64.0	49.8	66	33	1	12.3	59.1							115												
WA006282	64.0	56.5	88	11	1	12.7	59.6							115												
WA006283	63.5	58.5	87	12	1	12.8	63.9							115												
WA006284	64.0	59.5	87	12	1	12.9	62.6							115												
WA006291	63.5	50.5	67	32	1	12.3	61.4							110												
WA006292	63.5	49.8	61	38	1	12.3	60.5							115												

A/ See Table 1 for explanation of abbreviations and symbols.

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 4

QUALITY DATA OF WESTERN REGIONAL DURUM NURSERIES^{A/}

1977 CROP

VARIETY	STATE=OREGON STATION=PENDETON NURSERY=UNIFORM																								
	TW	KW	LG	ND	SM	PR	SEEK	SP	DU	VI	FR	RE	VAL	TB	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
STD 5/24/78	61.0	37.3	33	62	5	13.7	59.0								110										
CRANE	59.0	43.3	50	49	1	12.0	63.3	90																	
CRANE "B"	60.0	43.1	50	49	1	12.4	62.7	90																	
MEXICALI II	58.5	45.5	58	40	1	12.5	64.1	105																	
MODOC	61.0	43.9	59	40	1	13.5	64.3	115																	
WANDELL	56.0	35.1	20	77	3	12.3	60.5	80																	
71160015	60.0	45.8	50	48	1	12.4	65.3	110																	
72160037	57.0	44.1	35	63	2	13.2	62.5	125																	
CA0304	60.5	44.6	42	56	2	13.9	66.0	125																	
CA0310	59.5	42.9	46	52	2	13.8	65.2	120																	
CA0313	58.5	44.6	55	43	2	12.7	64.3	130																	
D7047	59.0	43.5	43	54	3	13.7	65.0	125																	
D7114	58.0	40.0	15	79	6	13.5	57.5	100																	
T7500009	55.0	37.7	13	84	3	13.7	60.5	115																	
T7500012	53.5	39.4	112	83	5	14.6	60.7	120																	
T7500017	58.0	41.8	30	68	2	12.8	62.6	120																	
T7500026	58.0	42.4	43	56	1	12.5	63.2	115																	
T7500041	59.0	43.1	40	59	1	13.7	63.2	120																	
T7500049	57.0	43.3	32	66	6	14.3	61.9	115																	
T7500052	57.0	45.0	38	60	2	11.7	63.2	115																	
T7500067	57.0	47.1	40	58	2	13.3	62.7	105																	
T7500072	57.0	43.5	35	63	2	12.9	62.2	125																	
T7500202	59.0	42.7	22	76	2	14.7	65.3	135																	
T7500447	56.5	36.4	7	86	7	14.9	62.4	130																	
WA6278	59.0	39.8	20	78	2	14.6	64.0	125																	
WA6282	58.0	45.2	48	50	2	13.2	64.5	125																	
WA6283	56.0	39.5	32	66	2	13.6	63.0	125																	
WA6284	58.0	43.3	52	46	2	12.9	63.2	120																	
WA6288	58.0	42.9	41	57	2	13.1	62.1	125																	
WA6291	57.5	37.9	33	65	2	13.3	64.3	115																	
WA6292	57.0	34.8	11	87	2	14.8	60.7	125																	

A/ See Table 1 for explanation of abbreviations and symbols.

YS

PB

MJ

PB

MJ

PB

MJ

PB

MN

PB

PB

MJ

TABLE 5

QUALITY DATA OF WESTERN REGIONAL NURSERIES

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 6

QUALITY DATA OF 1977 DURUM FIELD PLOT SAMPLES^{A/}

VARIETY	STATE=ARIZONA STATION=MESA NURSERY=FIELD-PLOT													SD										
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE
77-SID	61.0	37.3	33	62	5	13.7	52.6	19	131	9.0	8.00	2.9	4	YS										
BRANT	62.4	55.9	83	16	1	13.7	52.8	20	85	5.5	6.09	1.0	1											
COCORIT 71	62.0	66.7	84	15	1	12.3	54.2	17	75	5.0	7.26	2.6	1											
CRANE M	62.9	51.8	82	17	1	13.2	54.7	20	85	5.5	6.05	4.0	1											
JURI 69	63.5	64.5	89	10	1	13.9	52.3	13	95	7.5	5.68	0.7	1											
MAJHREBI	63.3	51.8	84	15	1	14.1	53.5	13	90	7.5	6.70	1.6	1											
MEXICALI 75	60.4	65.8	84	15	1	13.8	54.9	10	110	8.0	7.43	2.7	1											
MODOCRA	63.9	51.0	82	17	1	14.0	51.3	10	115	8.0	6.78	2.8	1											
PI-367233	63.6	57.8	83	16	1	13.6	54.2	13	90	6.0	5.96	2.6	1											
PI-367235	61.6	53.5	78	21	1	13.8	56.1	13	105	8.0	7.82	2.0	1											
PI-367236	61.1	57.1	77	21	2	14.4	54.1	17	100	8.0	6.54	5.2	1											
WPB1000D	62.0	61.0	92	8	0	12.9	54.9	10	90	7.5	7.67	3.8	1											
	61.5	50.8	75	24	1	12.9	55.0	13	105	8.0	6.36	4.8	1											
WPB1001D	62.7	53.5	79	20	1	13.1	52.0	13	100	8.0	8.01	2.3	1											
WPB1002D	62.8	58.8	84	15	1	13.0	52.4	17	100	8.0	7.06	4.5	1											
VC304	64.6	44.1	43	55	2	12.6	54.8	17	135	5.5	6.46	1.6	3											
VC313	61.7	45.0	44	54	2	12.9	52.5	23	135	5.5	4.95	4.5	3											
VC318	63.4	52.1	70	28	2	12.4	55.0	20	105	8.0	5.79	2.5	1											
VC320	62.7	45.7	35	63	2	12.8	53.4	17	130	9.5	7.04	7.5												

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 7

QUALITY DATA OF 1977 DURUM FIELD PLOT SAMPLES

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 8

QUALITY DATA OF 1977 DURUM FIELD PLOT SAMPLES A/

VARIETY	STATE=CALIFORNIA STATION=TULELAKE NURSERY=FIELD-PLOT																							
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE
77-STD	61.0	37.3	33	62	5	13.7	52.6	19	131	9.0	8.00	2.9	4											YS
LEEDS	62.0	41.3	37	60	3	13.2	53.9	23	125	9.0	7.52	2.7	4											MN
MODAC	62.6	43.1	54	44	2	12.4	52.5	13	120	9.0	9.22	3.8	3											PB
TL-75393	63.2	53.2	83	17	0	13.0	55.3	33	130	9.5	7.15	4.9	4											MN
TL-75394	63.9	52.1	80	20	0	14.0	56.6	23	135	9.5	7.58	1.8	4											MJ
TL-75395	63.1	54.3	71	28	1	13.9	56.5	23	135	9.5	7.78	3.4	4											
TL-75396	63.7	56.8	89	11	0	12.9	56.1	27	135	9.5	8.58	3.0	4											
TL-75397	63.7	55.2	80	19	1	13.6	56.7	30	135	9.5	6.91	3.4	3											MN
TL-75408	63.9	57.8	88	12	0	13.2	55.5	20	135	9.5	7.82	2.6	4											PB
TL-75409	64.9	60.2	93	7	0	13.6	53.7	13	140	9.5	8.70	5.8	4											

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 9

QUALITY DATA OF DURUM FIELD PLOTS A/ 1977 CROP

VARIETY	STATE=NORTH_DAKOTA STATION=WILLISTON NURSERY=FIELD-PLOT																									
	TW	KW	LG	MD	SM	PR	SEEK	SP	DU	VI	FR	RE	VAL	TH	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD	
CROSBY	61.3	37.9	24	74	2	16.5	53.0	30	9.5	7.1	6.1	4	4	9.0	6.6	6.6	5.9	5.9	5.9	4	PB	PB	PB	YS	YS	
ROLETTE	62.7	40.3	42	57	1	16.9	50.8	23	9.0	6.6	6.6	4	4	PB	MN	MN	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
RUGBY	60.6	37.0	19	79	2	17.6	54.5	17	9.0	7.4	7.2	4	4	PB	MN	MN	MJ	MJ	MJ	MJ	PB	PB	PB	PB	MN	MN
BOINO	62.1	37.6	20	79	1	16.3	52.7	20	9.5	7.9	7.2	4	4	PB	MJ	MJ	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
CANDO	61.9	31.8	8	87	5	15.4	51.1	10	9.5	5.1	8.0	1	1	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
COULTER	60.9	36.2	21	77	2	16.0	53.8	17	9.5	5.1	5.9	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
WAKOOMA	60.9	37.3	10	88	2	17.5	51.5	20	9.5	7.0	6.0	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
WARD	61.0	39.2	25	73	2	17.3	52.8	10	9.0	6.6	6.9	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
D7047 - Calvin	62.2	35.2	84	3	15.4	53.1	30	9.5	5.6	5.9	3	3	PB	PB	PB	PB	PB	PB	PB							
D7175 - Edmore	62.7	39.1	24	74	2	16.5	51.3	17	9.5	6.8	6.5	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	MN
D7224	61.8	35.3	20	76	4	16.5	51.5	20	9.5	4.3	7.9	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	MN
D7233	62.2	37.3	28	70	3	15.9	53.3	33	9.5	4.4	7.9	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB
D7266	61.7	36.2	14	83	3	15.6	51.6	13	9.5	5.5	5.1	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB
D7298	61.5	35.0	30	68	2	16.4	51.5	20	9.5	4.3	6.8	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
D7298	61.5	39.0	30	68	2	16.4	51.5	20	9.5	4.3	7.6	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	MN
D7307	61.8	39.2	42	57	1	15.6	52.8	13	9.5	4.3	7.9	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
D7327	63.1	40.7	50	49	1	15.8	52.2	20	9.5	5.1	6.2	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
D7368	61.3	33.9	10	85	5	15.6	52.7	23	9.5	6.1	5.9	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
D7475	61.5	33.9	26	71	3	16.0	52.8	13	10.0	6.1	5.9	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	PB
D7489	62.0	33.9	25	73	2	15.1	54.4	17	9.5	4.1	7.1	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	MN
D72114	61.8	41.8	61	38	1	16.3	49.1	20	9.5	5.1	7.9	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	MN
D73106	61.1	38.6	33	64	3	15.2	52.3	17	9.5	4.8	6.0	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	MN
D73121	61.1	36.2	29	69	2	17.0	50.8	13	9.0	7.3	5.1	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB
D74110	62.1	36.4	20	78	2	16.1	51.2	17	10.0	7.5	6.5	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MJ	PB
D74111	61.7	36.5	13	84	3	16.1	52.6	17	10.0	6.6	6.7	3	3	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB
D74112	62.0	40.8	38	61	1	15.8	52.9	17	10.0	6.9	6.9	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB
D74164	60.6	38.2	30	66	2	16.8	53.9	13	9.0	6.8	6.7	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB
DT354	61.3	41.0	45	55	0	15.9	55.0	17	10.0	6.1	6.7	4	4	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	MN	PB

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 10

QUALITY DATA OF DURUM ADVANCED NURSERIES^{A/} 1977 CROP

VARIETY	STATE=ARIZONA STATION=MESA NURSERY=ADVANCED											
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE
LEEDS	63.5	44.6	63	35	2	12.4	65.0					
CAPIETE	65.0	50.5	78	21	1	13.9	63.2	1.05				YS
GERANDO 466	63.5	60.6	86	13	1	11.8	64.7	80				PB
GERANDO 512	61.0	52.4	70	27	3	14.4	62.2	85				MJ
PI367207	62.0	51.5	69	29	2	13.4	63.2	90				MJ
PI367212	62.0	55.2	78	20	2	12.5	65.8	90				MJ
PI367225	61.0	43.1	58	38	4	11.3	62.7	1.15				MN
PI367227	60.0	64.1	72	26	2	12.5	62.6	85				MJ
PI-367229	60.5	51.8	70	28	2	12.1	61.8	90				MJ
PI-367231	60.5	66.7	62	17	1	13.3	64.4	80				MN
PI367232	60.5	57.3	82	17	1	13.7	62.7	1.00				MJ
PI367237	62.0	58.8	85	14	1	13.6	63.4	1.00				PB
WA6288	61.5	55.2	73	25	2	12.8	60.6	1.10				MJ
UC319	62.0	41.7	30	67	3	12.6	62.1	1.05				MN
									PB	MJ		PB

^{A/} See Table 1 for explanation of abbreviations and symbols.

TABLE 11

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1977 CROP

VARIETY	STATE=CALIFORNIA STATION=JULIELAKE NURSERY=ADVANCED												SD
	TW	KW	LG	MD	SM	PR	SEED	SP	DU	VI	FR	RE	
STD 5/25/78	61.0	37.3	33	62	5	13.7	58.5	1.15					4
COCORIT 71	64.0	54.3	76	22	2	10.7	63.2	.75					1
CRANE B	64.0	48.5	73	26	2	10.6	60.0	.85					1
MAGHREBI 72	63.5	46.1	69	30	1	12.2	60.2	.90					1
MODOC	64.5	52.1	79	20	1	13.6	59.9	1.05					2
STORK "S"	61.5	60.6	62	17	1	12.2	62.2	1.00					1
MANDELL	63.5	40.8	32	64	4	10.5	61.7	1.00					1
CA000304	65.5	56.2	79	20	1	12.2	61.5	1.05					2
CA000307	64.0	54.1	85	14	1	12.9	63.6	1.00					1
CA000309	62.0	56.5	79	19	2	10.8	61.9	1.00					1
CA000310	63.0	50.8	79	20	1	13.4	61.7	1.10					3
CA000313	63.5	53.2	62	17	1	12.1	62.0	1.10					3
CA000318	61.5	57.1	85	14	1	12.7	65.2	.95					1
CA000319	64.0	52.4	76	23	1	11.6	64.5	1.00					2
CA000320	63.0	51.5	73	26	1	11.9	64.0	1.05					2
CA000323	64.0	55.6	81	18	1	12.0	65.2	.95					1
CA000327	63.5	54.1	79	20	1	10.2	57.9	.65					1
CA000381	63.0	53.5	81	18	1	13.0	61.6	1.00					1
CA000382	63.0	56.2	77	22	1	12.3	61.6	1.00					1
CA000383	65.0	51.5	74	25	1	11.0	56.2	1.15					4
CA000386	63.5	57.3	84	15	1	11.1	62.6	1.00					1
CA000387	64.0	55.2	79	20	1	11.0	60.8	1.10					3
CA000388	63.0	52.6	81	18	1	13.2	59.4	1.20					4
CA000389	63.0	60.6	89	10	1	13.1	60.5	1.00					1
CA000390	63.5	54.3	79	20	1	12.9	57.1	1.00					4
CA000393	64.0	51.0	77	22	1	11.3	56.8	1.20					4

A/ See Table 1 for explanation of abbreviations and symbols.

PB

TABLE 12

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1977 CROP

VARIETY	STATE-WASHINGTON STATION-ROYAL_SLOPE NURSERY=ADVANCED														MN											
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	VAL	TH	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD	
STD 5/25/78	61.0	37.3	33	62	5	13.7	58.5	115																		YS
MEXICALI 77-1	63.5	53.5	80	19	1	10.0	62.0	85																		MJ
MEXICALI 77-2	62.5	57.1	87	12	1	11.5	64.1	85																		MJ
MEXICALI 77-3	63.5	57.3	82	17	1	11.3	60.7	80																		MJ
MEXICALI 77-4	64.0	57.3	88	11	1	11.9	58.9	85																		MJ
MEXICALI 77-5	65.5	50.0	74	25	1	12.1	60.1	80																		MJ
MEXICALI 77-6	64.5	57.8	86	13	1	12.2	60.9	80																		MJ
WANDELL	64.0	46.9	44	52	4	10.2	62.7	95																		MJ
71150125	63.5	52.4	74	24	2	11.4	60.8	115																		PB
71150150	64.0	52.6	76	22	2	12.2	62.0	115																		PB
CH-725034	63.5	54.1	76	23	1	12.5	62.3	115																		PB
CH725036	64.0	52.6	78	23	2	12.1	61.9	110																		PB
CH725041	64.0	53.8	74	24	2	12.1	61.9	110																		PB
E7124141	63.5	42.6	58	41	1	11.4	65.8	115																		PB
I7500056	63.0	51.3	74	25	1	11.3	62.5	95																		MJ
I7500066	64.0	50.8	78	21	1	12.3	64.5	110																		PB
I7500073	63.0	51.3	76	23	1	12.5	62.6	115																		PB
I7500086	64.0	47.4	71	28	1	11.8	64.5	100																		PB
I7500095	64.0	47.1	70	29	1	12.9	62.4	110																		PB
I7500118	64.0	47.8	71	28	1	12.3	64.0	110																		PB
I7500165	64.0	46.7	70	29	1	12.3	64.5	105																		MJ
I7500143	64.0	52.9	80	19	1	19.6	65.5	105																		MJ
I7500234	64.0	44.8	57	41	2	12.4	63.3	110																		PB
I7500239	63.5	52.9	74	24	2	12.0	60.1	110																		PB
I-7500365	64.0	51.3	75	24	1	12.5	64.5	110																		PB
I-7500392	63.5	52.9	69	29	2	10.6	67.3	105																		MJ

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 13

QUALITY DATA OF DURUM PRELIMINARY NURSERIES A/
1977 CROP

VARIETY	STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY																							
	TW	KW	LG	MD	SM	PR	SEEK	SP	DU	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD	
STD 5/31/78	61.0	37.3	33	62	5	13.7	61.0	5	110															
STD 6/1/78	61.0	37.3	33	62	5	13.7	61.0	5	110															
77-433	64.5	48.8	75	23	2	11.4	67.6	6	110															
77-434	64.0	46.3	76	23	1	11.4	67.6	6	115															
77-435	64.0	47.1	75	24	1	8.7	59.7	7	110															
77-436	64.5	45.5	75	24	1	11.4	60.9	9	115															
77-437	64.5	46.1	70	29	1	12.9	61.5	5	120															
77-438	64.0	49.0	79	20	1	11.4	61.8	8	120															
77-439	65.0	47.6	75	24	1	11.1	59.1	1	115															
77-440	64.5	46.3	78	21	1	13.8	59.7	7	115															
77-441	64.5	44.1	75	24	1	11.2	59.8	8	120															
77-442	64.0	46.3	78	20	2	12.9	59.9	9	115															
77-443	65.0	49.0	78	20	1	11.5	60.1	1	115															
77-444	65.0	44.4	76	23	1	11.8	60.1	1	115															
77-445	64.0	46.3	74	25	1	11.2	58.4	4	115															
77-446	64.5	46.3	76	23	1	11.6	59.7	7	120															
77-447	65.0	45.8	72	27	1	12.0	59.7	7	115															
77-448	65.0	47.8	78	21	1	11.6	60.8	8	125															
77-449	64.0	49.0	78	21	1	11.5	60.1	1	120															
77-450	65.0	48.3	76	23	1	12.3	57.6	1	115															
77-451	64.5	48.1	78	21	1	12.8	58.3	3	120															
77-452	64.5	46.5	74	25	1	12.0	58.4	4	120															
77-453	64.0	48.0	81	18	1	12.6	58.3	3	120															
77-454	64.5	49.0	79	20	1	13.0	58.3	3	125															
77-455	65.0	50.3	76	23	1	12.8	58.8	8	120															
77-456	65.0	51.3	75	24	1	12.6	57.6	6	115															
77-457	64.5	48.1	75	24	1	10.7	58.3	3	120															
77-458	64.5	50.5	77	22	1	10.0	57.2	2	115															
77-459	65.0	48.8	76	23	1	9.6	58.7	7	115															
77-460	64.5	47.1	72	27	1	9.5	59.0	0	110															
77-461	64.5	49.3	74	24	2	10.0	57.7	7	110															
77-462	64.0	48.5	74	25	1	9.6	58.7	1	110															
77-463	65.0	51.3	77	22	1	10.4	57.8	8	110															
77-464	65.0	49.8	77	22	1	10.4	57.9	9	110															
77-465	65.5	49.8	74	25	1	10.2	59.4	4	110															
77-466	65.5	50.0	73	26	1	10.3	58.8	8	110															
77-467	65.0	47.4	71	28	1	10.5	60.0	0	110															
77-468	65.0	51.8	77	22	1	11.9	59.1	1	115															
77-469	66.0	48.3	78	21	1	11.1	57.6	6	110															
77-470	65.0	50.5	74	25	1	11.3	57.8	8	110															
77-471	65.0	50.5	76	23	1	11.4	60.3	3	110															
77-472	65.5	50.3	76	24	0	11.1	58.0	1	115															
77-473	66.0	51.8	84	15	1	12.1	57.3	3	115															
77-474	65.5	51.3	77	22	1	12.1	56.7	7	115															
77-475	65.5	51.0	78	21	1	12.0	56.7	8	115															
77-476	66.0	48.8	77	22	1	11.7	58.5	1	115															
77-477	65.0	49.0	73	26	1	12.1	58.9	1	115															
77-478	65.5	48.5	80	19	1	12.4	58.5	1	115															
77-479	65.0	47.6	77	23	0	12.7	58.3	1	115															
77-480	65.5	48.3	76	23	1	12.5	59.0	0	115															
77-481	65.0	46.9	75	24	1	12.2	60.6	1	120															
77-482	66.0	47.8	75	24	1	12.8	62.1	1	115															

(CONT'D)

TABLE 13 (CONT'D)

QUALITY DATA OF DURUM PRELIMINARY NURSERIES A/ 1977 CROP

VARIETY	STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY																							
	TW	KW	MD	SM	PR	SEEK	SP	DU	VI	FR	VAL	GE	LG	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
77-483	65.0	48.5	76	23	1	14.2	60.5																1.15	
77-484	65.5	48.8	78	21	1	10.9	59.0																1.15	
77-485	65.5	46.3	75	24	1	11.1	60.9																1.15	
77-486	65.0	48.5	77	22	1	10.8	59.8																1.10	
77-487	64.0	47.4	76	23	1	10.9	58.1																1.10	
77-488	65.5	51.0	73	26	1	11.9	58.9																1.15	
77-489	64.5	48.8	76	23	1	11.1	57.8																1.10	
77-490	65.0	50.0	76	23	1	11.1	60.6																1.10	
77-491	65.5	54.1	75	24	1	11.1	58.9																1.15	
77-492	65.5	51.3	75	24	1	11.8	57.6																1.20	
77-493	65.5	57.8	80	19	1	12.2	55.9																1.10	
77-494	65.5	48.8	79	20	1	12.2	58.3																1.20	
77-495	66.0	48.3	76	24	0	12.4	58.7																1.15	
77-496	65.5	49.8	74	25	1	12.5	56.4																1.15	
77-497	65.5	52.1	78	22	0	12.3	59.2																1.15	
77-498	66.0	51.8	76	23	1	12.6	56.9																1.15	
77-499	66.0	51.8	78	21	1	12.6	56.5																1.10	
77-500	66.0	51.8	76	23	1	12.7	58.5																1.15	
77-501	65.5	50.8	75	24	1	12.3	57.6																1.15	
77-502	65.5	50.8	74	25	1	12.6	59.4																1.15	
77-503	65.0	52.1	78	21	1	12.3	59.2																1.15	
77-504	65.5	50.3	78	21	1	12.9	57.6																1.15	
77-505	65.5	54.1	74	25	1	12.9	58.3																1.20	
77-507	65.5	52.6	76	23	1	12.8	56.5																1.15	
77-508	66.0	49.3	73	26	4	13.1	58.7																1.15	
77-509	65.0	48.5	80	19	1	13.5	59.4																1.15	
77-510	65.5	49.0	80	19	1	10.9	60.3																1.10	
77-511	65.5	52.9	81	18	1	12.8	56.3																1.15	
77-512	64.5	52.9	80	19	1	10.7	59.9																1.10	
77-513	65.5	51.0	84	15	1	11.6	62.4																1.10	
77-514	66.0	50.3	80	15	1	11.1	60.5																1.15	
77-515	65.5	48.8	79	20	1	11.1	58.8																1.15	
77-516	65.5	50.0	79	21	0	11.7	59.7																1.10	
77-517	65.5	48.5	75	24	1	11.3	58.4																1.15	
77-518	65.0	50.8	83	16	1	12.5	59.1																1.15	
77-519	66.0	50.3	81	19	0	12.0	59.2																1.10	
77-520	65.5	50.0	79	20	1	12.4	59.0																1.15	
77-521	65.5	50.8	76	23	1	12.6	58.3																1.10	
77-522	66.0	49.5	75	24	1	12.5	58.3																1.10	
77-523	66.0	51.5	83	16	1	12.5	58.0																1.05	
77-524	66.0	51.3	81	19	0	12.4	59.4																1.15	
77-525	65.5	51.5	76	24	0	12.6	60.7																1.10	
77-526	66.0	48.5	76	24	0	12.9	58.3																1.15	
77-527	66.0	49.5	78	21	1	12.4	57.4																1.10	
77-528	65.5	50.8	78	21	1	13.2	59.0																1.15	
77-529	65.5	48.1	80	20	0	12.8	59.1																1.10	
77-530	65.5	49.3	79	20	1	13.3	60.1																1.15	
77-531	66.0	48.3	76	23	1	12.7	58.5																1.20	
77-532	66.0	48.1	74	25	1	13.2	58.5																1.20	

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 1

QUALITY DATA OF DURUM UNIFORM NURSERY BLENDS 1978 CROP

VARIETY	STATE=MN-ND-STATION=BLEND NURSERY=BLEND												Deficiencies ^{3/}											
	TW ^{1/}	KW ^{1/}	LG ^{1/}	MD ^{1/}	SM ^{1/}	FR ^{1/}	SEEK ^{1/}	SP ^{1/}	DU ^{1/}	VI ^{1/}	FR ^{1/}	-RE%	VAL ^{2/}	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	-RE%
STD 1978 3-22-79	7/Bu	8	2	14.8	62.5	1.24	10.0	0	7.78	4.8	4			PB	MN	MJ	MN	YS						
CROSSBY	62.2	42.7	50	4.8	2	14.8	62.5	1.18	10.0	6.07	7.4	3		PB	MN	MN	MN	YS						
ROLETTIE	61.2	37.9	28	6.8	4	13.9	63.0	1.13	10.0	6.07	7.4	4		PB	MN	MN	MN	YS						
RUGBY	61.0	36.9	38	5.9	3	14.4	63.5	1.12	10.0	6.98	7.4	3		PB	PB	PB	PB							
BOTNO	60.6	38.4	33	6.2	5	13.9	63.4	1.14	10.0	6.98	7.4	4		PB	PB	PB	PB							
CALVIN	59.6	37.7	31	6.4	5	13.9	64.0	1.12	10.0	7.08	7.9	3		PB	MN	MN	MN							
CANDO	59.4	34.9	19	6.3	9	14.3	62.8	1.12	10.0	6.85	7.0	3		PB	MN	MJ	MN							
COULTER	60.4	36.3	30	6.5	5	13.6	61.4	1.12	10.5	7.28	7.0	3		PB	MN	PB	MN							
EDMORE	59.9	36.7	38	5.6	6	14.7	64.2	1.18	10.0	8.01	6.8	4		PB	PB	PB	PB							
MINDUM	61.2	37.8	34	6.0	6	13.9	62.4	1.10	9.5	9.31	5.6	4		PB	PB	PB	PB							
D7224	60.0	39.1	32	6.2	6	13.3	61.6	1.23	9.5	8.40	8.3	3		PB	PB	PB	PB							
D7483	59.3	40.7	49	4.9	4	14.3	62.1	1.23	9.5	8.92	6.5	4		PB	PB	PB	PB							
D74109	61.0	41.0	36	6.0	4	14.6	62.7	1.23	10.0	9.31	4.3	4		PB	PB	PB	PB							
D74110	60.6	39.9	33	6.0	7	13.9	60.6	1.25	9.5	8.66	4.5	4		PB	PB	PB	PB							
D74112 - Vic	60.8	42.0	43	5.2	5	14.5	63.7	1.25	9.5	8.70	4.3	4		PB	PB	PB	PB							
D74164	59.9	38.9	36	6.0	4	14.5	62.7	1.18	10.0	8.75	4.4	4		PB	PB	PB	PB							
D75111	60.3	39.6	38	5.8	4	14.9	59.5	1.16	9.5	9.07	4.5	4		PB	PB	PB	PB							
D75140	58.3	39.3	30	6.4	6	14.9	61.6	1.29	9.5	7.45	4.3	3		MN	PB	MJ	PB							
D75171	60.4	38.5	23	7.1	6	14.2	62.9	1.26	10.0	7.93	4.1	3		PB	MN	PB	MN							
D75209	60.2	40.5	29	6.5	6	12.8	62.1	1.13	9.5	8.96	3.8	4		PB	PB	PB	PB							
DT427	60.3	40.2	39	5.7	4	14.1	62.1	1.28	10.0	7.91	3.8	4												

1/ TW = Test weight; KW = 1000-Kernel weight; LG = Large kernels; MD = Medium kernels, SM = Small kernels;
 PR = Wheat protein (14% m.b.); SEEK = Semolina extraction; SP = Number of specks in semolina per 64.5
 sq cm; DU = Semolina color; VI = Spaghetti color; FR = Cooked spaghetti firmness in g/cm; RE = Cooked
 spaghetti residue; MG = Milling deficiency based on percent semolina extraction.

2/ VAL = Final evaluation; 1 = No promise; 2 = Little promise; 3 = Some promise; 4 = Good promise.
 3/ PB = Probable; MN = Minor; MJ = Major.
 4/ SD = Standard; YS indicates standard.

TABLE 2

QUALITY DATA OF UNBLENDDED UNIFCRM NURSERY SAMPLES^{A/}

VARIETY	1978 CROP																																			
	STATE=NCRTH_DAKCTA STATION=WILLISTGN NURSERY=UNIFORM																																			
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD											
1978-STD 3-21-79	62.2	42.7	50.4	48	2	14.8	62.5		120	9.5	7.60	4.3	4	PB	PB																					
WARD	62.5	45.8	61	38	1	15.8	62.0		120	10.0	6.91	5.3	3																							
WAKOOMA	61.5	47.6	71	29	0	16.1	60.7		125	9.5	8.83	4.7	4																							
D761	62.0	44.6	62	37	1	15.6	60.7		130	9.5	7.82	4.6	4																							
D762	61.0	46.3	58	41	1	15.5	65.3		120	9.5	6.67	4.6	3																							
D763	62.0	46.5	61	38	1	16.3	58.7		120	9.5	9.24	4.3	4																							
D764	61.0	46.3	58	41	1	15.7	63.3		120	9.5	9.94	4.8	4																							

^{A/} See Table 1 for explanation of abbreviations and symbols.

TABLE 3

QUALITY DATA OF UNBLENDED UNIFORM NURSERY SAMPLES^{A/}

1978 CROP

VARIETY	STATE=MONTANA STATION=SIDNEY NURSERY=UNIFORM												1978 CROP							
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	RE	VAL	PR	MG	SP	DU	VI	FR	RE	SD
1978-STD	62.2	42.7	50.4	8	2	14.8	62.5		120	9.5	7.60	4.3								YS
WELLS	60.0	38.5	13	77	10	14.0	58.0		115	10.0	7.13	4.5	1	PB	MN	MJ	MJ	PB	PB	

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 4

QUALITY DATA OF WESTERN REGIONAL DURUM NURSERIES A/ 1978 CROP

VARIETY	STATE=IDAHO STATION=AERDEEN NURSERY=UNIFORM																							
	-TW-	-KW-	LG	MD	SM	-PR-	SEX	SP	DU	-VI-	-FR-	-RE-	VAL	-TW-	-KW-	-LG-	-SM-	-PR-	-MG-	-SP-	-DU-	-VI-	-FR-	-RE-
1978 STP 3-27-79	62.2	42.7	50	48	2	14.8	53.4	7	140	6.5	7.86	3.0	4	PB	MJ	MJ	MJ	PB	YS	YS	YS			
CANDO B/	65.4	37.0	47	52	1	13.9	44.8	30	75	6.0	7.39	3.2	1	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WANDELL	62.0	35.8	15	77	8	11.7	52.9	13	135	9.5	6.31	3.7	1	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
IRRIDUR	64.0	48.3	70	28	2	11.9	52.7	23	135	9.5	8.62	3.2	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
MODUC	63.4	42.7	59	39	2	13.2	53.0	13	135	9.5	8.23	3.5	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
CA0304	64.8	44.4	62	36	2	13.0	54.6	7	140	9.5	6.46	3.2	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
CA0307	64.2	52.6	83	17	0	13.7	52.9	10	120	8.5	7.04	4.0	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
CA0310	63.8	46.7	72	27	1	13.9	53.5	13	145	9.5	6.50	3.6	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
CA0313	64.1	50.0	78	21	1	12.8	54.1	13	140	10.0	7.43	3.7	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
CA0319	64.0	46.5	68	31	1	12.6	53.5	13	130	9.5	5.38	3.3	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75393	64.4	57.1	90	39	1	14.3	52.3	20	135	9.5	6.74	3.0	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75394	63.7	45.0	66	33	1	13.6	54.4	17	145	10.0	6.87	3.2	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75395	61.9	44.2	53	45	2	12.9	55.8	20	145	10.0	6.87	3.2	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75396	63.2	50.8	76	25	1	12.4	56.4	33	145	9.5	7.28	3.1	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75397	62.9	43.1	44	54	2	13.4	55.8	13	150	10.0	6.62	3.3	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75408	63.5	49.8	78	25	1	13.2	55.7	7	140	10.0	6.78	3.4	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
TL-75409	63.0	45.2	64	35	1	12.7	54.9	17	140	10.0	6.29	3.9	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA6282	62.6	55.6	81	18	1	13.0	56.3	20	135	9.5	6.98	3.2	3	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA6283	62.8	55.9	80	19	1	12.5	56.8	20	135	9.5	7.28	3.4	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA6284	63.1	56.5	82	17	1	12.2	56.5	13	135	9.5	7.47	4.0	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA6292	63.9	49.9	74	26	0	12.7	54.9	13	130	9.0	7.91	3.3	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA6516	62.4	53.8	80	19	1	12.6	56.2	13	135	9.5	7.69	3.8	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA6517	62.0	54.3	82	17	1	12.3	58.0	53	130	9.5	8.19	3.2	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6518	63.4	51.3	82	18	0	13.2	53.0	0	13	9.5	7.73	3.5	1	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6519	62.5	45.0	58	41	1	13.4	53.3	17	150	10.0	7.41	3.3	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6520	64.0	44.4	58	41	1	13.4	51.6	10	140	10.0	7.80	3.2	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6521	63.9	49.3	80	20	0	15.0	51.0	20	135	9.0	8.14	3.2	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6522	59.4	36.4	15	77	8	12.8	53.2	3	145	10.0	7.34	3.2	1	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6523	62.8	55.9	81	18	1	12.4	55.1	13	135	9.5	8.49	3.4	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6524	63.1	53.5	81	18	1	12.3	54.2	20	135	9.5	8.21	3.6	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			
WA 6525	62.9	55.2	81	18	1	12.0	53.8	13	135	9.5	8.47	3.3	4	PB	MJ	MJ	MJ	PB	MJ	MJ	PB			

A/ See Table 1 for explanation of abbreviations and symbols.

B/ Does not appear to be Cando. Reacts more like a bread wheat. May have been mislabelled when packaged.

TABLE 5

QUALITY DATA OF WESTERN REGIONAL DURUM NURSERIES A/ 1978 CROP

VARIETY	STATE=WASHINGTON STATION=PULLMAN NURSERY=UNIFORM																							
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	FR	FE	VAL	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
1978 STD	62.2	42.7	50	48	2	14.8	51.8	10	12.0	9.0	7.75	5.8	4											
BREAD WHEAT	62.0	42.0	78	22	0	12.5	43.4	20	7.0	5.0	7.28	3.2	1											
MODUC	63.0	48.5	77	22	1	12.7	50.3	13	12.5	9.0	8.45	3.0	4											
WANDELL	61.5	36.9	28	65	7	11.4	52.6	10	13.5	9.5	6.54	3.2	1											
CA000304	64.0	50.3	78	22	0	13.5	52.6	10	14.0	9.5	6.65	3.3	3											
CA000307	63.0	53.2	85	14	1	13.0	52.7	13	12.0	9.0	6.96	3.4	3											
CA000310	62.5	46.1	69	35	1	13.8	51.6	13	13.5	9.5	6.59	3.1	3											
CA000313	62.5	49.3	74	23	1	12.3	53.2	13	12.3	10.0	6.74	3.3	3											
CA000319	63.0	46.1	76	23	1	12.6	51.8	10	13.0	9.5	6.09	3.6	3											
D 7047 - Calvin	63.0	49.0	74	25	1	12.5	51.0	7	13.0	9.5	5.68	3.6	3											
TL-75393	63.0	52.9	85	14	1	13.2	49.8	3	14.0	9.5	7.39	3.1	4											
TL-75394	62.5	48.8	74	24	2	14.1	51.1	7	13.5	9.5	7.84	3.0	4											
TL-76395	62.5	46.3	68	30	2	13.4	52.4	17	14.0	10.0	5.21	3.1	3											
TL-75397	62.0	51.3	69	30	1	13.9	52.0	13	14.0	10.0	5.27	4.0	3											
TL-75408	63.0	56.8	80	19	1	13.0	51.6	3	14.0	10.0	5.16	4.0	3											
TL-75409	62.5	54.9	72	27	1	12.9	52.6	27	13.0	9.5	5.23	3.5	3											
WA 6516	62.5	56.2	80	20	0	12.4	53.3	17	14.0	9.5	5.81	3.9	3											
WA 6517	62.5	60.6	77	22	1	12.5	51.4	3	13.5	10.0	5.18	3.3	3											
WA 6518	61.5	53.8	80	20	0	12.9	52.1	13	12.5	9.5	5.51	3.3	3											
WA 6519	63.5	54.9	78	21	1	13.6	52.6	10	14.5	10.0	5.79	3.5	3											
WA 6520	63.0	50.0	72	28	0	13.1	51.7	7	13.5	9.5	5.18	3.0	3											
WA 6522	62.5	50.3	65	33	2	12.6	50.6	7	13.5	9.5	7.13	3.2	4											
WA 6523	62.5	57.3	80	20	0	12.1	50.7	7	14.0	10.0	5.10	2.2	3											
WA 6524	62.0	58.5	76	22	2	12.4	51.4	7	13.5	9.5	5.29	1.3	3											
WA 6525	62.5	58.5	79	20	1	12.5	52.4	7	13.5	9.5	5.34	1.2	3											
WA006282	62.5	57.8	78	21	1	12.6	53.0	13	13.5	9.5	5.18	1.1	3											
WA006283	61.5	56.5	77	22	1	12.0	53.2	13	13.5	10.0	6.48	1.0	3											
WA006284	63.0	57.3	76	23	1	12.0	49.0	13	13.5	10.0	7.50	1.0	4											
WA006292	62.0	51.0	62	37	1	12.4	53.9	17	13.5	9.5	7.13	0.8												
													PB											

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 6

QUALITY DATA OF DURUM FIELD PLOTS A/ 1978 CROP

STATE=CALIFORNIA STATION=EL-CENTRO NURSERY=FIELD-PLOT																												
VARIETY	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD			
4-18-79 1977 STD	60.1	45.7	33	63	4	13.7	52.4	10	120	9.0	6.93	5.5	3											MN	PB	YS		
PRODURA	64.9	50.8	60	19	1	13.2	53.5	13	90	7.5	5.68	5.3												MJ	PB			
MAGHREBLE	63.0	46.0	56.5	60	38	2	13.2	55.6	10	105	8.0	6.09	5.6	1										MJ	MN	PB		
MEXICALI	63.6	58.1	82	16	2	12.3	55.8	10	120	9.0	6.59	6.1	3											MN	PB			
MODOC	65.7	52.4	73	25	2	12.3	50.3	7	120	9.0	7.17	5.7	4											PB	PB			
1000D	61.2	52.6	75	23	2	12.3	47.9	33	110	9.5	6.67	6.5	2											MN	MN			
UC304	63.6	44.4	40	57	3	12.2	51.9	7	140	10.0	6.70	5.8	3	PB											MN	PB		
UC307	63.1	46.7	58	40	2	11.5	51.1	3	125	9.5	6.39	6.0	3											MJ	PB			
UC310	62.4	45.0	49	49	2	13.0	53.2	7	135	10.0	5.90	5.7	3											MJ	PB			
UC313	62.5	46.9	59	39	2	12.2	49.4	13	135	10.0	6.67	5.7	3											MN	MN			
UC318	62.3	46.9	57	41	2	11.3	55.1	3	115	9.0	5.92	6.5	3											MJ	MN			
UC319	62.5	42.6	34	64	2	12.2	54.4	10	125	9.5	5.92	6.3	3	PB											MJ	MN		
UC320	62.8	48.1	50	47	3	11.5	54.4	23	125	9.5	6.48	6.4	3											MJ	MN			
UC323	62.9	45.7	46	50	4	11.2	51.7	13	120	9.5	5.94	6.4	3											MJ	MN			

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 7

QUALITY DATA OF DURUM FIELD PLOTS A/ 1978 CROP

VARIETY	STATE=NORTH_DAKOTA STATION=DICKINSON NURSERY=FIELD-PLOT																							
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE
CROSBY	59.7	40.5	46	52	2	15.6	53.0	20		9.5	5.90	6.2	4										PB	YS
ROLETTE	60.8	44.2	62	36	2	16.0	51.7	7		9.0	7.08	5.1	4										PB	YS
RUGBY	60.0	43.3	54	44	2	15.4	52.9	20		9.5	5.40	7.2	3										MN	PB
BOTNO	59.9	41.7	58	40	2	14.9	54.2	17		9.5	6.00	6.7	4										PB	PB
CALVIN	60.6	43.3	52	47	1	14.4	51.6	23		9.5	5.50	6.9	4										PB	PB
CANDO	59.9	39.7	41	57	2	14.1	51.3	23		10.0	5.60	6.5	4										PB	PB
COULTER	59.1	41.5	53	46	1	15.2	51.5	30		10.0	7.50	6.1	4											
EDMORE	60.6	45.7	61	38	1	15.2	50.3	23		10.0	7.50	6.3	4											
WARD	59.7	42.7	57	42	1	16.0	53.4	20		9.5	6.10	6.3	4										PB	PB
D761	60.9	42.9	71	27	2	15.8	51.3	30		9.0	5.60	6.9	4										MJ	MN
D762	59.5	50.3	74	25	1	15.9	53.0	23		9.5	4.50	7.6	3											PB
D763	59.9	46.9	72	27	1	16.8	52.3	23		9.5	6.70	6.6	4											
D764	59.7	45.8	60	38	2	15.8	54.2	33		9.5	6.60	6.2	4											
D7224	60.7	45.0	64	35	1	13.8	52.2	23		10.0	6.50	7.1	4										PB	
D7483	59.4	44.2	68	30	2	15.1	53.1	30		10.0	7.40	6.0	4											
D74109	60.5	50.8	67	32	1	15.2	54.5	27		9.5	6.70	6.4	4											
D74110	60.9	47.1	64	32	4	15.3	50.5	23		10.0	7.20	6.7	4											
D74112	60.8	51.0	76	22	2	15.8	51.4	20		9.5	6.80	6.4	4											
D74164	59.4	47.1	66	34	0	16.2	51.9	27		9.5	6.50	6.5	4											
D75209	60.2	47.1	61	38	1	15.8	51.4	27		9.5	6.70	6.9	4									PB	PB	
D75171	60.2	46.7	52	46	2	16.5	52.3	33		9.5	7.10	5.7	4										MN	

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 8

QUALITY DATA OF DURUM FIELD PLCTS A/ 1978 CROP

VARIETY	STATE=NORTH_DAKOTA STATION=WILLISTON NURSERY=FIELD-PLOT																							
	TW	KW	LG	ND	SM	PR	SEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE
CROSBY	62.2	45.7	33	65	2	15.1	52.5	2.3		10.0	6.70	5.9	4											Y S
ROLETTE	64.6	42.7	58	41	1	14.7	52.7	3.0		9.5	5.50	6.9	4	PB										
RUGBY	63.8	43.7	49	50	1	13.9	53.3	3		9.5	5.10	7.2	3	MN										
BOTNO	64.7	43.1	53	46	1	14.4	53.5	2.3		9.5	5.70	6.2	4	PB										
CALVIN	64.3	41.3	40	59	1	13.6	53.1	2.7		10.0	5.40	6.8	3	PB										
CANDO	62.5	39.4	15	82	3	13.3	52.0	1.7		10.0	5.00	6.9	1	MN										
COULTER	62.9	44.6	41	58	1	13.6	52.3	3.0		10.0	5.50	6.7	4	PB										
EDMORE	63.3	52.4	56	43	1	14.4	52.0	0	30	10.0	6.60	6.8	4											PB
WAKOOMA	62.0	38.3	23	75	2	13.8	52.3	7		9.5	8.42	5.1	1	MN										
WARD	63.4	43.3	54	44	2	13.7	53.0	20		9.5	5.80	7.7	4	PB										
WELL S	63.4	35.7	20	76	4	13.6	54.4	3		9.5	7.93	4.8	1	MJ										
D761	62.6	45.2	56	43	1	14.2	52.4	2.7		9.5	4.80	7.1	3											
D762	63.1	47.8	63	36	1	14.4	53.9	2.0		9.5	5.30	7.1	3											
D763	62.9	44.8	55	45	0	15.2	53.3	3.0		10.0	6.60	7.1	4											
D764	62.7	44.6	52	47	1	14.7	55.2	2	27	10.0	7.20	6.5	4	PB										
D7224	63.7	45.2	50	48	2	12.1	51.0	13		10.0	5.50	6.8	4											
D7483	62.4	45.0	45	40	0	14.1	51.3	17		10.0	7.30	6.4	4											
D74109	63.2	44.2	40	59	1	14.9	53.2	20		9.5	6.20	6.2	4											
D74110	63.9	44.2	58	42	0	13.6	49.9	13		10.0	5.90	6.7	3											
D74112	63.7	47.4	56	44	0	14.2	50.5	17		10.0	6.10	6.0	4											
D74164	63.2	43.1	57	42	1	14.2	51.9	27		9.5	6.10	6.8	4											
D75111	63.1	44.4	53	45	2	15.1	51.5	27		9.5	6.40	6.6	4											
D75142	60.7	41.5	38	61	1	14.8	54.1	7		10.0	7.52	5.2	4	MN	PB	MN								
D75171	63.0	40.7	30	69	1	14.4	51.9	23		10.0	6.10	6.7	3	PB										
D75209	62.9	43.9	34	65	1	14.6	52.5	27		9.5	6.20	6.0	4											

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 9

QUALITY DATA OF DURUM INTERNATIONAL NURSERY A/ 1978 CROP

VARIETY	STATE=WASHINGTON STATION=PULLMAN NURSERY=INTERNATIONAL																									
	TW	KW	LG	MD	SN	PR	SEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD	
1978 STD	62.2	42.7	50.4	7	3	14.8	63.5	120						3	PB	PB	MN		YS							
CROSBY	62.0	48.1	66	33	1	13.6	69.5	105						3												
ANHINGA "S"	63.5	50.8	79	15	2	13.5	69.1	85						1	MJ	MN										
TRITICALE BACUM	56.0	40.3	54	43	3	12.2	51.2	35						1	PB	PB										
BADRI	60.5	44.8	80	18	2	14.7	64.0	70						1	PB	PB										
BALCORCENO	60.5	54.6	77	22	1	12.7	65.0	100						1												
BD1814X BB1708	62.0	48.1	75	23	2	12.9	65.5	85						1												
CUCORIT 75	62.0	48.3	69	29	2	11.7	70.0	70						1												
CRESO	62.5	51.5	77	22	1	12.9	66.5	80						1												
GDOVZ-512	62.5	51.3	81	16	1	13.5	68.5	90						1												
GEDIZ "S"	62.5	51.5	72	26	2	13.5	68.5	105						3												
GTA "S"	63.0	48.8	73	25	2	11.6	66.5	85						1												
JNK	62.0	47.6	75	23	2	13.2	67.0	90						1												
JUPATECO 73	61.5	43.3	68	31	1	12.9	65.7	50						1	PB	PB										
MEXI "S"	61.5	50.3	71	25	4	12.1	71.5	90						1												
MEXI "S"-FG "S"	60.5	50.8	79	15	2	12.9	71.4	105						3	PB	PB										
MEXI "S"-FG "S"	62.0	52.6	80	19	1	11.9	70.9	100						1												
MEXICALI 75	60.5	52.9	79	20	1	12.9	69.7	90						1	PB	PB										
PARANA 66/253	59.0	50.8	77	23	0	13.2	67.5	85						1												
QUILAFEN	62.0	48.3	69	30	1	12.7	68.5	110						4												
RAJ911	61.5	54.1	85	13	2	14.6	68.0	85						1												
SNIPE "S"	61.0	51.0	78	21	1	12.5	65.5	80						1	MJ	MJ	MN									
WANDELL	61.5	51.3	77	23	0	11.4	67.0	105						1												
YEMEN	60.5	48.5	77	23	0	14.1	66.0	75						1	PB	PB										
D6811	62.0	61.7	77	23	0	12.5	67.0	80						1												
21563-AA																										

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 10

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1978 CROP

VARIETY	STATE=CALIFORNIA STATION=DAVIS NURSERY=ADVANCED												4
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	
1978-STD 4/2/79	62.0	42.7	50	48	2	14.8	65.0	120					
847-1	66.0	52.4	85	14	1	11.8	66.9	105					1
847-2	64.0	49.8	61	38	1	11.6	66.9	100					1
847-3	63.5	43.9	63	36	1	11.6	65.7	105					1
847-4	63.5	44.1	63	36	1	11.9	66.9	105					1
847-5	63.0	48.5	71	28	1	11.8	65.1	115					1
847-6	65.0	48.1	68	31	1	11.8	66.3	100					1
847-7	63.0	47.6	63	36	1	11.5	66.3	115					1
847-8	65.0	51.0	73	26	1	11.8	63.4	95					1
847-9	65.0	50.5	81	18	1	12.0	65.0	110					2
847-10	64.0	47.1	76	23	1	11.6	61.5	100					1
847-11	63.5	46.7	74	26	0	12.0	66.3	95					1
847-12	64.0	48.3	71	28	1	13.0	67.4	100					1
847-13	64.5	42.0	50	49	1	12.3	62.9	105					1
847-14	64.0	54.6	72	27	1	12.4	64.0	105					1
847-15	65.0	58.1	90	9	1	11.1	63.4	105					1
847-16	64.5	56.2	89	10	1	11.5	62.9	105					1
847-17	65.0	47.8	66	33	1	11.7	62.0	115					1
847-18	63.5	50.0	78	22	0	10.5	63.5	115					1
847-19	64.0	54.9	90	9	1	11.7	59.5	110					2
847-20	68.0	53.8	85	14	1	11.8	63.5	100					1
847-21	63.5	55.2	82	17	1	11.8	62.0	100					1
847-22	65.0	47.8	75	24	1	11.6	62.5	90					1
847-23	65.0	47.8	81	18	1	11.8	60.0	100					1
847-24	65.0	50.3	68	32	0	11.9	63.5	85					1
847-25	65.0	49.3	76	24	0	12.6	64.0	105					1
847-26	66.0	52.9	78	22	0	12.6	63.0	105					1
847-27	66.0	54.9	81	18	1	11.4	66.0	100					1
847-28	65.0	47.8	75	24	1	11.6	62.5	90					1
847-29	65.0	50.3	81	18	1	11.8	62.0	100					1
847-30	63.5	55.2	82	17	1	11.8	62.0	100					1
847-31	65.0	47.8	75	24	1	11.6	62.5	90					1
847-32	65.0	48.8	81	18	1	11.8	62.0	100					1
847-33	65.0	50.3	68	32	0	11.9	63.5	85					1
847-34	65.0	49.3	76	24	0	12.6	64.0	105					1
847-35	66.0	52.9	78	22	0	12.6	63.0	105					1
847-36	65.0	47.8	75	24	1	11.4	66.0	100					1
847-37	65.0	50.3	81	18	1	11.8	62.0	100					1
847-38	65.0	47.8	75	24	1	11.6	62.5	90					1
847-39	65.0	50.3	68	32	0	11.9	63.5	85					1
847-40	65.0	49.3	76	24	0	12.6	64.0	105					1
847-41	66.0	52.9	78	22	0	12.6	63.0	105					1
847-42	65.0	54.9	81	18	1	11.4	66.0	100					1
847-43	65.0	50.3	68	32	0	11.9	63.5	85					1
847-44	64.0	52.9	78	22	0	12.6	64.0	105					1
847-45	65.0	54.9	81	18	1	11.4	66.0	100					1
847-46	65.0	51.5	76	24	0	12.2	66.0	105					1
847-47	64.0	57.1	86	13	1	12.2	67.5	100					1
847-48	63.5	51.8	84	16	0	11.8	62.0	85					1
847-49	65.0	51.0	78	22	0	11.4	64.5	120					1
847-50	65.0	55.2	85	15	0	9.9	64.7	75					1
847-51	65.0	50.4	81	18	0	10.9	63.3	80					1
847-52	63.0	46.1	51	49	0	10.9	62.7	90					1
847-53	63.0	54.5	83	17	0	10.9	62.7	90					1
847-54	63.0	51.5	84	16	0	11.8	62.0	85					1
847-55	62.0	56.5	89	11	0	10.9	58.7	50					1
847-56	65.0	51.0	78	22	0	11.4	64.5	120					1
847-57	65.0	55.2	85	15	0	9.9	64.7	75					1
847-58	63.0	46.1	51	49	0	10.9	63.3	80					1
847-59	63.0	54.5	83	17	0	10.9	62.7	90					1
847-60	63.0	51.5	84	16	0	11.8	62.0	85					1
847-61	62.0	56.5	89	11	0	10.9	58.7	50					1
847-62	65.0	51.0	78	22	0	11.4	64.5	120					1
847-63	65.0	55.2	85	15	0	9.9	64.7	75					1
847-64	64.0	53.5	85	15	0	11.9	60.7	95					1
847-65	65.0	56.5	84	16	0	11.5	62.7	80					1
847-66	65.0	55.2	81	19	0	10.6	61.3	110					2
847-67	63.0	54.3	66	34	0	10.8	59.4	105					1
847-68	65.0	49.5	69	31	0	10.7	60.7	105					1
847-69	65.0	52.6	80	19	0	11.0	55.3	115					3
847-70	64.0	51.0	73	27	0	11.0	50.3	115					1
847-71	64.0	52.6	81	19	0	11.8	61.3	95					1
847-72	65.0	50.5	69	31	0	12.0	58.0	105					1
LEEDS 848-24	65.0	50.3	73	27	0	12.0	63.3	110					2
LEEDS 848-25	65.0	52.1	65	35	0	11.7	62.7	100					1
ND6655 848-25	63.0	55.9	82	17	1	11.2	63.3	100					1
MEXICALI 75 848-30	61.0	55.0	74	26	0	10.7	58.7	105					1
848-31	65.0	50.0	74	26	0	10.7	58.7	105					1
848-32	61.0	43.5	51	48	1	10.6	56.7	100					1
848-33	64.0	48.8	73	27	0	10.9	65.3	110					2

(CONT'D)

TABLE 10 (CONT'D)

QUALITY DATA OF DURUM ADVANCED NURSERIES-A/ 1978 CROP

VARIETY	STATE=CALIFORNIA STATION=DAVIS NURSERY=ADVANCED																								
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
848-45	63.5	51.5	73	27	0	10.8	65.3	100						1											MJ
848-46	63.0	51.3	78	21	1	11.3	64.7	105						1											MJ
848-48	63.5	50.8	75	25	0	11.5	64.0	95						1											MJ
848-49	63.0	55.2	83	17										1											MJ
848-50	65.0	43.3	83	73	1	11.2	65.9	90						1											MJ
848-52	64.5	50.3	76	24	0	11.6	62.3	95						2											PB
848-54	65.0	50.5	79	20	1	11.3	67.7	105						1											MJ
848-55	64.0	50.3	81	19	0	11.3	58.9	110						2											MJ
848-57	62.5	46.5	55	44	1	11.4	61.1	110						2											MN
848-62	62.0	51.0	80	19	1	10.0	62.9	65						1											MN
848-66	62.5	59.0	89	10	1	12.0	66.5	95						1											PB
848-68	64.5	49.8	79	21	0	12.2	66.0	95						1											MN
848-70	64.0	44.3	80	19	1	11.7	62.0	85						1											MN
848-71	65.0	54.1	85	13	2	10.8	67.5	105						1											PB
848-72	63.0	46.3	55	44	1	11.6	64.5	100						1											MN
848-80	64.0	51.0	80	19	1	12.3	66.5	105						1											PB
848-83	64.0	53.0	75	24	1	12.5	62.5	100						1											MN
848-89	65.5	51.3	76	23	1	10.4	66.5	90						1											MN
848-90	63.0	46.9	63	36	1	10.8	68.5	95						1											PB
848-91	62.0	59.2	90	9	1	12.0	60.5	75						1											MJ
848-92	64.0	57.1	90	9	1	12.4	63.0	80						1											PB
848-96	65.0	51.8	85	14	1	11.0	61.5	80						1											MN
848-98	63.0	52.9	77	22	1	11.7	65.5	95						1											MN
848-100	64.0	49.0	77	23	0	10.7	66.0	100						1											PB
848-104	62.0	50.0	81	19	0	13.3	62.5	105						1											PB
862-65023	63.0	47.4	55	44	1	11.3	66.9	105						1											PB
862-65057	64.0	50.0	67	33	0	11.0	66.0	115						3											PB
862-65077	65.5	57.8	88	12	0	12.5	67.4	100						1											MN
862-65239	63.0	57.3	86	14	0	12.4	62.0	100						1											PB
862-65435	63.0	51.5	82	18	0	13.4	66.5	115						3											PB
862-65843	60.5	51.3	75	25	0	13.7	63.0	100						1											PB
862-65961	63.0	53.2	79	23	0	12.5	65.0	95						1											PB
862-65965	64.5	53.0	77	23	0	11.7	66.0	115						1											PB
862-65989	65.5	56.8	87	13	0	13.5	68.5	105						1											PB
862-66023	62.0	50.0	72	28	0	12.4	63.5	90						1											PB
862-66133	63.0	49.0	75	25	0	11.9	66.5	100						1											PB
862-66339	62.0	51.0	89	11	0	13.4	63.0	75						1											PB
862-66456	62.0	48.5	70	29	1	12.5	63.2	85						1											PB
862-66761	64.0	54.3	85	15	0	13.0	67.4	80						1											PB
862-66860	63.0	54.9	71	29	0	11.6	69.0	85						1											PB
862-66878	63.0	57.1	85	15	0	12.0	66.0	75						1											PB
862-66908	61.5	59.9	81	18	1	10.6	67.4	105						1											PB
862-66948	62.0	59.2	83	16	1	12.6	68.5	70						1											PB
862-66954	63.0	58.8	87	12	1	11.7	69.1	80						1											PB
862-66957	61.0	57.1	88	10	1	12.0	68.0	80						1											PB
862-66975	63.0	52.1	79	20	1	11.6	70.0	90						1											PB
862-67018	63.0	45.5	51	48	1	11.6	66.0	90						1											PB
862-67022	63.0	44.2	57	42	1	11.9	68.5	80						1											PB
862-67055	63.0	52.4	85	15	0	11.6	68.0	85						1											PB
862-67076	63.0	50.8	77	22	1	13.8	65.7	110						2											PB

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 11

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1978 CROP

VARIETY	STATE=CALIFORNIA STATION=TULE LAKE NURSERY=ADVANCED														SD													
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	DU	VII	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE			
1978 STD 3-23-79	62.0	42.7	50.4	47	3	14.8	58.0	120							4												YS	
TL-78-917	65.0	53.5	84	14	2	11.1	58.0	115								PB												
TL-78-918	65.0	52.6	82	18	0	11.9	57.5	110								MJ												
TL-78-919	65.0	50.5	74	25	1	12.1	54.5	110								MJ												
TL-78-920	65.0	56.5	91	8	1	11.9	58.5	115								PB												
TL-78-921	66.0	54.9	89	10	1	11.3	57.0	115								PB												
TL-78-922	65.0	52.6	85	14	1	12.1	56.5	120								PB												
TL-78-923	63.0	55.2	88	12	0	10.1	57.5	115								PB												
TL-78-924	63.0	55.6	77	23	0	11.3	57.0	115								PB												
TL-78-925	62.5	48.3	64	36	0	10.6	54.0	115								PB												
TL-78-926	64.0	50.5	75	24	1	10.0	59.5	120								PB												
TL-78-927	64.0	47.4	64	36	0	10.9	60.5	120								PB												
TL-78-928	63.0	45.5	48	50	2	11.8	57.0	120								PB												
TL-78-929	64.0	48.5	81	19	0	10.3	61.0	125								PB												
TL-78-930	64.0	48.8	72	28	0	10.9	59.0	125								PB												
TL-78-931	64.0	47.6	62	38	0	11.9	57.0	125								PB												
TL-78-932	64.0	48.1	78	22	1	9.7	60.5	120								PB												
TL-78-933	64.0	48.5	74	26	0	11.4	60.0	120								PB												
TL-78-934	64.0	47.5	66	34	0	12.2	58.5	125								PB												
TL-78-935	64.0	53.2	85	14	1	10.3	60.0	130								PB												
TL-78-936	64.0	51.0	78	22	0	11.1	55.5	125								PB												
TL-78-937	64.0	49.3	72	27	1	11.8	57.5	125								PB												
TL-78-938	64.0	52.4	78	21	1	9.7	56.5	120								PB												
TL-78-939	64.0	50.0	68	32	0	10.4	57.5	120								PB												
TL-78-940	63.0	46.9	56	43	1	11.2	57.0	120								PB												
TL-78-941	66.0	52.0	84	15	1	11.7	57.5	115								PB												
TL-78-942	66.0	53.8	84	15	0	11.4	54.5	120								PB												
TL-78-943	66.0	53.2	84	16	0	11.7	56.0	115								PB												
TL-78-944	66.0	51.5	82	18	0	10.7	57.5	120								PB												
TL-78-945	66.0	51.3	84	16	0	10.8	56.5	120								PB												
TL-78-946	66.0	53.2	85	15	0	11.0	56.5	120								PB												
TL-78-947	65.5	54.1	83	17	0	12.5	57.5	115								PB												
TL-78-948	65.0	51.8	81	19	0	11.1	57.5	120								PB												
TL-78-949	66.0	51.8	84	16	0	11.3	57.0	120								PB												
TL-78-950	65.0	52.4	83	17	0	11.7	58.5	125								PB												
TL-78-951	64.0	54.6	86	14	0	12.4	58.0	120								PB												
TL-78-952	65.5	51.3	85	15	0	11.9	56.5	120								PB												
TL-78-953	65.0	52.6	84	16	0	11.6	57.0	120								PB												
TL-78-954	65.5	54.1	85	15	0	11.6	56.0	120								PB												
TL-78-955	65.0	52.1	85	15	0	12.0	57.0	120								PB												
TL-78-956	65.0	52.9	86	14	0	12.1	58.5	125								PB												
TL-78-957	65.5	52.1	84	16	0	11.9	55.5	120								PB												
TL-78-958	65.0	52.9	83	17	0	12.5	57.0	120								PB												
TL-78-959	65.0	52.9	83	17	0	11.8	57.5	120								PB												
TL-78-960	64.5	54.9	86	14	0	12.6	56.0	125								PB												
TL-78-961	66.0	50.8	84	16	0	11.3	57.0	120								PB												
TL-78-962	65.0	52.4	83	17	0	11.7	58.5	125								PB												
TL-78-963	65.0	54.6	86	14	0	12.4	59.0	115								PB												
TL-78-964	65.5	54.3	86	14	0	12.4	57.0	120								PB												
TL-78-965	65.5	54.6	88	12	0	12.7	58.5	120								PB												
TL-78-966	65.5	54.3	84	16	0	11.3	58.5	110								PB												
TL-78-967	66.0	54.3	85	15	0	12.7	59.0	110								PB												

(CONT'D)

TABLE 11 (CONT'D)

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1978 CROP

VARIETY	STATE=CALIFORNIA STATION=TULELAKE NURSERY=ADVANCED																								
	TW	KW	LG	MD	SM	PR	SEEK	SP	DU	VI	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
TL-78-968	65.5	54.3	86	14	0	12.3	60.0	110						2											
TL-78-969	65.0	51.8	86	14	0	11.5	55.5	115						3											
TL-78-970	66.0	52.4	86	14	0	11.2	56.0	115						3											
TL-78-971	66.0	54.1	84	16	0	11.3	55.5	115						3											
TL-78-972	66.5	52.4	87	13	0	11.6	58.0	115						3											
TL-78-973	66.0	53.8	86	14	0	11.6	58.5	115						3											
TL-78-974	66.0	51.8	85	14	0	11.6	55.0	110						3											
TL-78-975	65.5	52.4	85	15	0	11.7	57.0	115						3											
TL-78-976	66.0	52.4	83	17	0	12.2	56.0	115						3											
TL-78-977	65.5	51.5	84	16	0	11.5	59.0	115						3											
TL-78-978	66.0	52.6	84	15	0	12.3	58.0	110						2											
TL-78-979	65.5	51.8	82	18	0	11.6	59.5	115						3											
TL-78-980	66.0	51.0	82	18	0	12.3	58.5	110						2											
TL-78-981	65.0	51.0	80	20	0	11.8	59.0	110						2											
TL-78-982	66.0	52.4	81	19	0	12.7	57.5	110						2											
TL-78-983	66.0	51.0	79	21	0	11.8	59.0	110						2											
TL-78-984	65.5	50.8	80	20	0	11.8	58.5	110						2											
TL-78-985	65.5	52.4	83	17	0	12.5	60.0	110						2											
TL-78-986	65.0	49.3	76	24	0	12.2	57.5	110						2											
TL-78-987	65.0	50.5	78	22	0	12.2	58.5	110						2											
TL-78-988	65.0	53.8	80	20	0	12.3	60.5	110						2											
TL-78-989	65.0	54.9	82	18	0	12.4	59.5	110						2											
TL-78-990	65.0	50.8	78	22	0	12.7	60.5	110						2											
TL-78-991	65.0	52.1	84	16	0	11.8	58.0	105						1											
TL-78-992	65.0	50.8	84	16	0	11.8	59.0	110						2											
TL-78-993	64.5	52.4	82	18	0	12.1	59.0	110						2											
TL-78-994	65.0	51.0	85	15	0	12.2	60.5	105						1											
TL-78-995	64.5	51.8	83	17	0	11.6	58.5	105						1											
TL-78-996	65.0	52.9	83	17	0	11.9	58.0	110						2											
TL-78-997	65.0	52.4	84	16	0	11.8	59.5	110						1											
TL-78-998	65.0	53.8	81	10	0	12.2	59.0	110						1											
TL-78-999	65.0	53.8	86	14	0	12.0	61.0	110						1											
TL-78-1000	65.0	51.8	86	14	0	12.0	61.0	105						2											
TL-78-1001	65.0	51.5	80	20	0	12.0	58.0	105						1											
TL-78-1002	65.5	53.5	81	19	0	12.1	65.0	105						1											
TL-78-1003	65.0	51.8	82	18	0	12.2	63.0	110						2											
TL-78-1004	64.5	52.4	83	17	0	12.4	62.0	105						1											
TL-78-1005	65.0	51.5	78	22	0	12.0	62.5	105						1											
TL-78-1006	64.5	51.0	74	25	0	12.0	63.0	110						2											
TL-78-1007	65.0	54.3	80	20	0	12.4	63.5	105						1											
TL-78-1008	65.0	53.5	81	19	0	12.1	65.0	105						2											
TL-78-1009	65.0	53.5	79	21	0	12.2	63.0	110						1											
TL-78-1010	65.0	47.8	80	20	0	12.2	60.5	105						2											
TL-78-1011	65.0	45.5	77	23	0	12.1	62.5	105						1											
TL-78-1012	64.5	48.1	76	24	0	12.0	63.0	110						2											
TL-78-1013	65.0	45.8	73	26	0	12.5	63.5	105						1											
TL-78-1014	65.0	51.3	80	20	0	12.5	62.5	110						2											
TL-78-1015	64.0	49.5	74	25	0	12.4	60.0	105						1											
TL-78-1016	64.5	47.4	85	15	0	11.8	62.0	110						2											
TL-78-1017	65.0	48.5	86	14	0	12.0	61.5	105						1											
TL-78-1018	64.5	50.5	88	12	0	12.0	63.0	105						2											
TL-78-1019	64.5	50.5	86	14	0	12.5	63.5	110						1											
TL-78-1020	65.0	49.5	86	14	0	12.2	62.0	105						2											

MJ

(CONT'D)

TABLE 11 (CONT'D)

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1978 CROP

VARIETY	STATE=CALIFORNIA STATION=TULELAKE NURSERY=ADVANCED																								
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VIL	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
TL-78-1021	65.0	51.0	84	16	0	12.0	59.5	105																	MJ
TL-78-1022	64.5	49.5	85	15	0	11.7	61.5	105																	MJ
TL-78-1023	65.0	52.1	86	14	0	12.2	61.0	105																	MJ
TL-78-1024	65.0	51.3	87	13	0	12.3	58.0	105																	MJ
TL-78-1025	64.5	49.8	84	16	0	12.9	64.5	105																	MJ
TL-78-1026	65.0	49.5	81	19	0	12.5	59.5	110																2	
TL-78-1027	65.0	49.0	82	18	0	12.3	62.0	105																1	
TL-78-1028	64.5	49.0	84	16	0	12.4	63.0	105																1	
TL-78-1029	64.5	49.8	83	17	0	12.9	62.5	105																1	
TL-78-1030	64.5	53.8	83	17	0	13.0	64.0	105																1	
TL-78-1031	65.0	49.5	80	20	0	12.5	61.5	105																1	
TL-78-1032	64.5	50.5	80	20	0	12.4	62.0	105																1	
TL-78-1033	65.5	48.5	80	20	0	12.8	62.5	110																2	
TL-78-1034	65.0	50.3	80	20	0	12.8	62.5	110																1	
TL-78-1035	65.0	47.1	80	20	0	12.7	62.5	105																1	
TL-78-1036	64.5	47.4	74	26	0	12.4	61.5	100																1	
TL-78-1037	65.0	47.8	77	23	0	12.7	63.5	105																1	
TL-78-1038	64.5	48.1	79	21	0	12.8	62.5	105																1	
TL-78-1039	65.0	49.3	80	20	0	12.8	62.0	105																1	
SHASTA	65.5	50.3	79	21	0	12.9	62.0	100																2	
C117438	64.0	42.7	77	23	0	12.4	69.5	60																1	
CA000304	65.5	47.6	74	26	0	10.1	64.0	110																2	
CA000307	65.5	51.5	85	15	0	10.6	65.0	120																4	
CA000310	65.5	51.8	85	15	0	10.5	66.5	105																1	
CA000313	65.0	50.0	82	18	0	10.8	62.0	120																4	
CA000319	65.0	49.8	77	23	0	9.5	63.5	115																3	
CI015070	62.5	40.3	38	60	2	8.5	62.5	100																2	
C1017466	65.0	51.5	83	17	0	10.9	61.5	105																1	
WA6516	64.0	53.2	86	14	0	9.8	61.5	115																3	
WA6517	63.0	54.3	85	14	1	9.9	65.5	110																4	
WA6518	64.0	50.3	79	21	0	9.6	59.5	115																2	
WA6519	65.5	49.8	78	22	0	10.8	62.0	120																4	
WA6520	65.5	48.8	76	24	0	10.6	65.0	115																3	
WA6521	65.5	47.6	80	20	0	10.3	63.0	115																3	
WA6522	64.5	42.4	46	52	2	9.8	63.0	120																4	
WA6523	63.5	54.6	85	15	0	9.9	62.0	110																2	
WA6524	63.5	48.8	78	22	0	10.0	63.0	115																3	
WA6525	63.5	52.1	86	14	0	10.1	62.5	115																3	
WA006282	64.0	54.3	83	17	0	10.1	62.0	115																3	
WA006283	63.0	51.0	82	17	1	10.1	61.5	115																3	
WA006284	64.0	55.6	84	16	0	10.0	61.5	115																3	
WA006292	64.0	46.9	69	31	0	10.1	61.5	110																2	
TL-75393	65.5	54.3	90	10	0	10.5	60.0	115																3	
TL-75394	64.0	48.8	75	25	0	10.3	65.0	110																2	
TL-75395	64.0	47.8	66	33	1	10.2	64.0	115																3	
TL-75396	62.5	54.6	88	12	0	10.3	63.0	115																4	
TL-75397	64.0	48.5	74	26	0	10.3	64.5	120																2	
TL-75408	65.0	54.1	86	14	0	10.3	63.0	110																1	
TL-75409	65.0	49.3	74	26	0	9.9	63.5	105																1	

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 12

QUALITY DATA OF DURUM ADVANCED NURSERIES A/ 1978 CROP

VARIETY	STATE=WASHINGTON STATION=PULLMAN NURSERY=ADVANCED														YS
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VI	FR	RE	SD		
1978 STD 3-30-79	62.0	42.7	50	47	3	14.8	63.5	120							2
MEXICALI	63.0	54.9	81	17	2	12.4	68.7	110							MJ
WANDELL	62.0	38.5	24	73	3	11.7	64.5	115							PB
CA-313	63.0	47.4	75	24	1	12.3	65.7	115							PB
CA-327	61.5	44.6	57	43	0	11.7	64.0	80							MJ
CA-389	63.0	47.1	66	33	1	11.7	66.9	125							MJ
CH-725036	62.0	51.3	74	25	1	12.4	66.9	120							MJ
E7124141	63.0	40.5	41	58	1	11.5	65.1	125							MJ
GTA	63.0	52.9	79	21	0	11.3	66.9	95							MJ
RAB1	64.0	53.8	81	19	0	12.2	64.6	95							MJ
RF-75	59.5	63.3	81	19	0	14.1	67.5	80							MJ
17500066	63.0	51.5	81	19	0	12.3	65.7	110							MJ
17500073	61.5	46.1	75	24	1	12.8	64.6	110							MJ
17500086	63.0	45.5	63	36	1	12.9	65.7	115							PB
17500095	64.0	45.2	69	31	0	12.9	65.1	110							MJ
175000143	63.0	50.0	74	25	1	12.3	68.0	110							MJ
175000165	63.0	47.8	69	30	1	13.0	65.7	110							MJ
175000239	61.5	42.9	61	38	1	12.3	65.1	115							PB
71150125	62.0	50.8	73	25	2	11.8	66.9	115							PB
71150150	62.0	54.1	79	20	1	12.8	62.9	120							PB

A/ See Table 1 for explanation of abbreviations and symbols.

TABLE 13

QUALITY DATA OF DURUM SPECIALS/^A 1978 CROP

VARIETY	STATE=ARIZONA STATION=MESA NURSERY=SPECIALS																							
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VI	FR	RE	VAL	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	SD
1978-STD 4/2/79	62.2	42.7	50	48	2	14.8	52.8	23	135	9.0	C	6.00	8.0	3										
1	63.8	57.1	84	16	0	13.0	53.9	10	120	9.5	S	7.50	5.2	1										MJ
2	60.4	57.8	79	21	0	14.0	50.0	17	110	9.0	S	7.45	5.9	1										PB
3	63.0	73.0	97	3	0	14.4	54.9	30	90	8.0	C	6.85	6.1	1										MN
4	64.4	61.3	91	9	0	13.7	55.5	10	85	7.5	S	5.88	5.4	1										MJ
5	62.4	62.1	92	8	0	12.1	58.2	17	120	9.0	S	6.65	6.1	1										MN
6	62.1	47.6	41	57	2	13.2	53.9	13	130	10.0	C	6.96	6.2	3										PB
7	62.3	45.7	42	57	1	13.8	54.1	20	145	10.0	S	5.77	5.9	3										MJ
8	60.9	46.9	50	48	2	13.4	53.6	17	140	10.0	S	6.57	5.7	3										MN
9	60.7	51.8	66	32	2	13.5	55.0	17	135	10.0	S	4.40	5.7	4										PB
10	62.2	56.8	86	14	0	12.4	60.7	10	130	9.0	S	7.52	5.4	4										PB
11	66.0	65.8	93	7	0	12.2	56.8	13	110	8.0	S	6.52	6.0	1										MN
12	63.3	63.7	92	8	0	12.3	62.4	17	120	9.0	S	8.06	5.6	1										PB
13	63.0	58.1	85	15	0	13.0	56.7	3	105	8.0	S	7.13	6.7	1										MJ
14	64.0	64.1	91	9	0	11.9	56.6	7	120	8.5	S	7.93	6.3	1									PB	
15	63.0	59.9	88	12	0	12.0	56.4	3	110	8.0	S	7.19	6.6	1									MN	
16	62.8	56.5	84	16	0	13.3	55.7	7	105	8.0	S	8.51	6.1	1									PB	
17	64.3	74.0	97	3	0	14.8	53.4	3	100	8.0	S	8.08	5.6	1									MN	
18	58.9	53.5	69	30	1	14.1	54.3	10	105	9.0	S	9.32	5.5	1									PB	

^{A/} See Table 1 for explanation of abbreviations and symbols.

TABLE 14

QUALITY DATA OF DURUM SPECIALS A/ 1978 CROP

VARIETY		STATE=ARIZONA STATION=MESA NURSERY=SPECIALS										SD												
		-TW-	-KW-	LG	MD	SM	_PR_	SEEX	SP	DU	_VI-	-FR-	-RE-	VAL	-TW-	KW	_LG	_SM	_PR	_MG	_SP	DU	_VI	-FR
4/5/79 1978	STD	62.0	42.7	50	48	2	14.8	67.0		120					4									
19		62.0	55.6	81	19	0	13.3	65.0		90					1									
20		61.5	61.7	87	13	0	12.2	69.5		105					1									
21		61.5	61.3	72	27	1	12.7	60.5		95					1									
22		59.0	56.8	68	30	2	12.3	70.0		105					1									
23		61.0	51.0	81	19	0	12.4	62.5		90					1									
24		62.5	53.5	83	17	0	14.6	65.5		95					1									
25		62.0	44.8	65	34	1	12.7	63.0		85					1									
26		61.0	51.8	82	18	0	12.6	64.0		100					1									
27		62.0	39.5	41	58	1	14.9	66.0		120					4									
28		61.5	64.5	91	8	1	15.5	65.0		85					1									
29		61.5	51.3	79	21	0	12.6	63.5		95					1									
30		63.0	53.8	80	19	1	12.9	66.0		110					2									

A/ See Table 1 for explanation of abbreviations and symbols.

YS

PB

MJ

MN

MN

PB

MN

TABLE 15

QUALITY DATA OF DURUM SPECIALS A/ 1978 CROP

VARIETY	STATE=IDAHO STATION=ABERDEEN NURSERY=SPECIALS																							
	TW	KW	LG	MD	SM	PR	SEEX	SP	DU	VII	FR	RE	VAL	TW	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE
4-5-79 1978 STD	62.2	42.7	50	48	2	14.8	67.0	120	4					3					YS					
4-6-79 1978 STD	62.2	42.7	50	48	2	14.8	55.0	120	3					1					YS					
CANDO B/ 1978	65.5	36.1	51	47	2	13.9	71.0	65						1					MJ					
IRRIDUR	64.0	49.5	80	19	1	11.1	71.0	105						1					MJ					
MODDC	61.5	44.6	41	2	12.9	70.0	115							3					PB					
WANDELL	63.0	39.4	19	74	7	11.3	71.0	105						1					MJ					
CA0304	64.5	46.3	62	37	1	13.2	73.0	115						3					PB					
CA0310	63.5	50.5	78	21	1	13.3	72.0	105						1					MJ					
CA0313	63.5	49.0	70	29	1	13.5	71.0	120						4					PB					
CA0319	62.5	52.1	80	20	0	12.8	70.0	115						3					PB					
TL-75393	63.5	50.0	69	30	1	12.8	72.0	110						2					MJ					
TL-75394	63.5	53.8	85	14	1	13.7	72.0	110						3					PB					
TL-75395	63.5	45.8	71	28	1	13.7	69.5	120						4					PB					
TL-75396	62.0	45.0	55	43	2	12.7	71.0	120						4					PB					
TL-75397	61.0	46.3	71	28	2	12.7	71.0	120						4					PB					
TL-75408	62.5	45.0	53	45	2	12.2	70.0	120						4					PB					
TL-75409	62.5	47.6	76	23	1	13.1	70.0	115						3					PB					
WA6282	62.5	44.2	56	42	2	12.9	72.0	115						3					MJ					
WA6283	62.5	52.1	80	18	2	13.0	64.0	110						2					MJ					
WA6284	62.0	50.0	82	17	1	12.9	67.0	110						2					MJ					
WA6292	62.0	59.2	86	13	1	11.2	67.0	110						2					MJ					
WA6516	64.0	48.3	75	24	1	12.1	66.0	110						2					MJ					
WA6517	61.5	53.5	81	17	2	12.8	66.0	110						2					MJ					
WA6518	61.5	52.6	82	16	2	12.3	66.0	110						2					MJ					
WA6519	63.0	52.4	78	21	1	11.8	64.0	110						2					MJ					
WA6520	62.5	49.0	65	33	2	13.0	66.5	120						4					PB					
WA6521	63.5	47.4	61	37	2	13.3	73.5	115						3					PB					
WA6522	63.5	48.3	82	17	1	13.7	65.0	120						4					PB					
WA6523	56.5	35.6	10	79	1	12.9	64.0	125						1					MJ					
WA6524	62.0	54.1	80	18	2	12.9	66.5	115						3					PB					
WA6525	62.5	53.5	82	16	2	12.7	65.0	110						2					MJ					
								115						3					PB					

A/ See Table 1 for explanation of abbreviations and symbols.

B/ Does not appear to be Cando. Reacts more like a bread wheat.

B/ May have been mislabeled when packaged.

TABLE 16

QUALITY DATA OF DURUM SPECIALS/A/ 1978 CROP

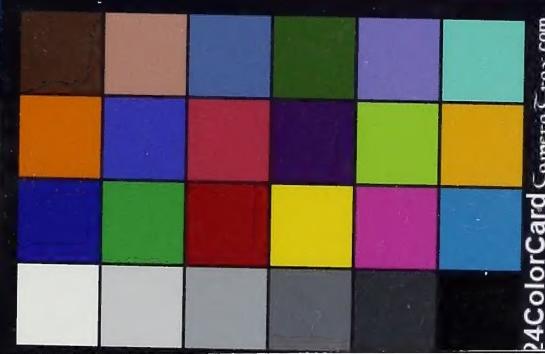
VARIETY	STATE=WASHINGTON STATION=PULLMAN NURSERY=SPECIALS														SD										
	TW	KW	LG	MD	SM	PR	SEX	SP	DU	VIL	FR	RE	VAL	Th	KW	LG	SM	PR	MG	SP	DU	VI	FR	RE	
4/5/79 1978 STD	62.0	42.7	50	48	2	14.8	67.0	120	4	1															YS
MODDC	63.0	46.9	68	31	1	12.4	69.1	105	1	1															MJ
PROSPER	62.0	42.7	69	30	1	12.0	72.6	55																	MJ
WANDELL	62.0	48.2	27	68	5	11.3	70.9	105																	PB
CA000304	63.0	46.7	63	36	1	12.9	70.9	115																	MJ
CA000307	63.0	49.5	77	22	1	12.5	71.4	105																	3
CA000310	62.0	46.7	69	30	1	13.0	68.6	110																	2
CA000313	62.0	46.9	67	31	2	12.7	67.4	120		4															MJ
CA000319	64.0	45.5	66	32	2	12.5	70.3	105																	MJ
D7047	63.0	48.3	72	26	2	11.7	72.0	105																	1
WA6516	63.0	51.3	73	25	2	12.6	69.1	115																	3
WA6517	62.0	53.0	79	20	1	12.0	69.7	115																	PB
WA6518	61.0	49.5	78	21	1	12.6	69.7	100		1															MJ
WA6519	63.0	49.0	69	30	1	13.6	70.9	120		4															PB
WA6520	63.0	45.8	65	33	2	12.9	68.6	110																MJ	
WA6521	62.0	46.9	71	28	1	13.9	70.3	110																2	
WA6522	62.0	44.8	59	38	3	12.3	71.4	115																3	
WA6523	62.0	51.0	72	25	2	12.2	69.7	115																PB	
WA6524	62.0	51.0	73	20	1	12.0	69.7	115																4	
WA6525	63.0	52.4	79	19	2	11.8	69.1	120																PB	
WA0006282	63.0	50.5	75	23	2	12.3	66.9	115																PB	
WA0006283	62.0	49.5	74	24	2	11.4	68.6	115																MJ	
WA0006284	62.0	52.1	76	21	3	11.2	66.9	110																PB	
WA0006292	62.0	52.6	77	21	2	11.6	69.7	115																PB	
TL-75393	63.0	46.5	68	34	1	12.0	65.7	110																2	
TL-75394	63.0	49.8	79	20	1	12.8	67.9	115																PB	
TL-75395	62.0	46.3	67	32	1	14.1	69.7	115																PB	
TL-75396	62.0	46.5	64	35	1	13.6	73.3	115																PB	
TL-75397	62.0	51.8	79	20	1	12.4	66.0	120																PB	
TL-75408	63.0	47.6	72	27	1	13.7	69.3	115																PB	
TL-75409	63.0	46.3	56	43	1	12.5	68.0	120																PB	

A/ See Table 1 for explanation of abbreviations and symbols.

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RIGHT



CAT84809928_011

Durum wheat quality report

aTS2120 .A1U5

1977/1978

1978

Batch: NAL15_0252



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LEFT



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